

The genus *Phora* (Diptera, Phoridae) from Nepal, Taiwan and Neighbouring Countries

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ABSTRACT—A taxonomic study on the genus *Phora* from Nepal, Taiwan and neighbouring countries is reported. The following 15 species are described as new to science: *Phora fulvipennis*, *P. nepalensis*, *P. acuminata*, *P. glebiata*, *P. paricauda*, *P. salpana* and *P. tenuisprceps* from Nepal; *P. fensestrata*, *P. shirozui*, *P. subconvallium*, *P. taiwana* and *P. tattakana* from Taiwan; *P. acerosa* from Nepal and Taiwan; *P. digitiformis* from Nepal and Myanmar; and *Phora orientis* from Korea and China. The Chinese *P. capillosa* SCHMITZ is redescribed and illustrated for male genitalia. A key to the males of the species in the present study is provided.

INTRODUCTION

The genus *Phora* LATREILLE is a large taxonomic group in the subfamily Phorinae, comprised of 57 living species in the world. Most of them inhabit temperate to subalpine zones mainly in the Northern Hemisphere. The Palaearctic and Nearctic fauna of *Phora* have been extensively studied by phorid taxonomists (SCHMITZ, 1953, 1955; SCHMITZ and WIRTH, 1954; BORGMEIER, 1963; ZAITZEV, 1977; DISNEY, 1982, 1983; GOTO, 1984, 1985a, 1985b, 1985c, 1986; MICHAILOVSKAYA, 1999; MOSTOVSKI and DISNEY, 2001; MOSTOVSKI, 2002). Although the habitat of *Phora* species extends from the Middle East to Southeast Asia, only fragmentary information has been available. *Phora capillosa* SCHMITZ (1933) from northwestern China was the first species found in this area. Thereafter, *Phora pilifrons* BEYER (1958) was described from Myanmar and *Phora lacunifera* GOTO (1984) was recorded from Nepal and Taiwan when described from Japan. LIU and CHOU (1994) recognized seven species of *Phora* mainly from southwestern China, including one new species and the rediscovery of the poorly known *P. capillosa*. In recent years, MOSTOVSKI (2001) recorded *Phora pubipes* SCHMITZ from Taiwan and also described two new species of *Phora* from Tajikistan and India (MOSTOVSKI, 2003).

Through a study of phorid flies in the collection of Kyushu University, I have identified 15 species of *Phora* mainly from Nepal and Taiwan. As all of them were found to represent new species, they are described as new to science in the present paper. In addition, the male genitalia of *P. capillosa* are redescribed and illustrated

based on the examination of a paratype as a voucher for identification of the species. A key to the males of the species discussed in the present study is also provided. The male genitalia are described using the same methods and the same terminology as in GOTO (1984).

The type specimens of new species, unless otherwise stated, are deposited in the Entomological Collection of the Kyushu University Museum in Fukuoka.

DESCRIPTIONS

Phora orientis sp. nov.
(Figs. 1, A-I; 17, A)

Male. Frons moderate in width, frontal index 0.29, parallel-sided. Preocellar seta very weak, 1/2 as long as mediolateral and slightly ventral to the latter, closer to mediolateral than to anterolateral; supra-antennal seta slightly shorter than preocellar; frontal setulae sparse, distinctly shorter than supra-antennal, arranged in two rows. Palpus with 3 short bristly hairs on distal portion. Scutum short setulose.

Wing hyaline, slightly tinged with grayish brown, costa velvety black, other veins brown except pale A₁. Costa short, costal sector index 0.44-0.45; 1st costal sector slightly shorter than 2nd, costal sector index 0.89-0.93; vein M₁ weakly curved; vein M₂ very weakly bisinuate, nearly straight; vein M₃₊₄ bisinuate, strongly curved posteriorly on distal 1/3; vein A₁ complete to wing margin; costal cilia short, 1.9-2.3× as long as width of 2nd costal sector; axillary margin with 1 hair. Wing length, 1.67-1.74 mm,

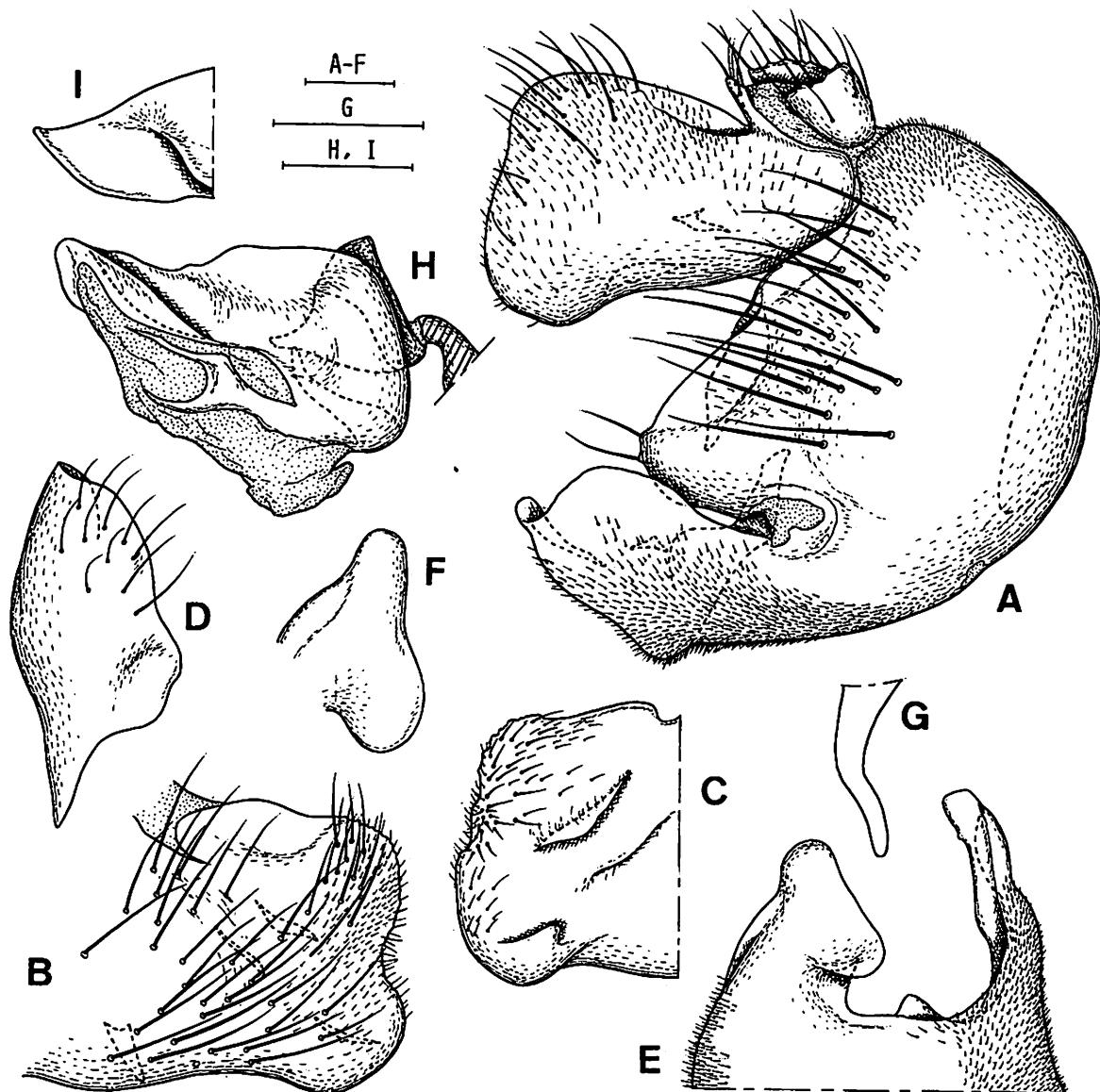


Fig. 1. Male genitalia of *Phora orientis* sp. nov.

A, Genitalia in right lateral view; B, left surstylius in lateral view; C, ditto in inner view; D, right surstylius in dorsal view; E, distal portion of right hypandrial lobe in ventral view; F, left process of right hypandrial lobe in posterior view; G, projection of 10th sternum; H, aedeagus in right lateral view; I, distal portion of aedeagus in dorsal view. Scales: A-F, 0.1 mm; G-I, 0.05 mm.

width 0.78-0.84 mm.

Legs black; fore leg yellowish brown at tip of femur, whole tibia and tarsus. Fore tibia $0.94 \times$ as long as 1st to 4th tarsomeres together; fore tarsus weakly dilated, distinctly narrower than tip of fore tibia, relative lengths of fore tarsomeres approximately 15 : 8 : 7 : 6 : 6. Mid tibia with 1 anterior bristle and a dorsal row of 3-4 bristles. Hind tibia with 1 anterior bristle; ventroproximal prominence of hind femur weakly produced ventrally, protruding about 0.02 mm, with distal margin rounded.

Male genitalia shining black. Lateral lobe of epandrium short, strongly tapered distally, with distal margin weakly rounded. Right surstylius widened distally,

elongate trapezoidal in lateral view, with posterodorsal and posteroventral corners rounded, nearly straight on posterior margin, bearing bristly hairs on posterodorsal portion, entirely shorthaired except on ventroproximal portion; inner side with a weak ridge. Left surstylius dorsoproximally separated from epandrium by a shallow V-shaped membranous incision, roughly rectangular with corners rounded in lateral view, with posterior margin weakly emarginate at middle, serrate on posterodorsal corner, with dorso-inner margin weakly produced inwardly, bearing many bristly hairs on posterodorsal portion and many bristles on ventroproximal 1/2; inner side thickened on posteroventral corner and there

produced to form a small projection, with two weak ridges as in Fig. 1, C. Right hypandrial lobe with posterior margin straight, shorthaired on both lateral sides. Right process of right hypandrial lobe longer than wide, nearly parallel-sided in lateral view, with posterodorsal corner rounded and posteroventral corner produced to form a small projection together with an inner ridge. Left process of right hypandrial lobe bilobed distally as in Fig. 1, F. Tenth sternum with a slender, long process. Aedeagus of general type; right lateral plate sharply pointed at apex in dorsal view.

Body length: about 2.0 mm.

Female. Unknown.

Holotype: ♂, Mt. Sudo-san (500 m), Gyongsanbug-Do, Korea, 30.vii.1977, K. YAMAGISHI, (KMNHIR200,219).

Paratype: 1♂, Mt. Chinshishan (1000-1600m), Szechwan, China, 31. vii. 1980, T. Gotoh.

Type depository: The type specimen is deposited in the collection of the Kitakyushu Museum of Natural History and Human History, Kitakyushu.

Distribution. Korea, China.

Remarks. This new species is easily identified by the male genitalia, in addition to having a markedly short costa and a small body. Its male genitalia are considerably similar to those of the Japanese *P. kitadakensis* GOTOH, 1985, especially in having a slender process on the 10th sternum, but *P. orientis* has the left surstyli emarginated on the posterior margin and the lateral lobe of the epandrium is strongly tapered distally and rounded on the distal margin.

P. orientis was collected by sweeping branches of evergreen trees at the edges of forests.

Phora fulvipennis sp. nov.

(Figs. 2, A-H; 17, B)

Male. Frons wide, frontal index 0.35-0.36, parallel-sided or very slightly widened posteriorly. Preocellar relatively long, 0.7-0.8× as long as mediolateral, equidistant from anterolateral and mediolateral, inward to them; supra-antennal 0.6-0.7 of preocellar in length; frontal setulae bristly, 0.9-1.4× as long as supra-antennal, densely scattered. Palpus with 3 short bristles. Scutum short setulose.

Wing hyaline, markedly tinged with grayish brown; vein R₄₊₅ reddish brown, other veins yellowish brown. Costa rather long, costal index 0.53-0.54; 1st costal sector shorter than 2nd, costal sector index 0.87-0.89; vein M₂ weakly bisinuate, vein M₃₊₄ bisinuate; vein A₁ incomplete, disappearing near wing margin; costal cilia 2.7-4.3× as long as width of 2nd costal sector; axillary margin with 5 hairs. Wing length 2.28-2.76 mm, width 1.10-1.30 mm.

Legs black; fore leg brownish yellow at tip of femur, whole tibia and tarsus, the latter slightly darkened distally. Fore tibia 0.86-0.87× as long as 1st to 4th fore tarsomeres together, with a dorsal row of spine-like weak setulae; fore tarsus moderately dilated, distinctly narrower than tip of fore tibia, relative lengths of fore tarsomeres approximately 25 : 12 : 11 : 10 : 9. Mid tibia with 2 anterior bristles and a dorsal row of 7-8 bristles. Hind tibia with 1 anterior bristle; ventroproximal prominence of hind femur slightly produced, protruding about 0.04 mm, with distal margin weakly rounded.

Male genitalia shining black. Lateral lobe of epandrium wider than long, with distal margin rounded. Right surstyli relatively small, weakly spatulate in lateral view, with distal margin rounded, bearing bristly hairs on posterodorsal 1/2. Left surstyli dorsoproximally with a shallow V-shaped membranous incision, roughly rectangular, with ventral margin concave, weakly emarginate at ventral 1/3 of weakly rounded posterior margin, with dorso-inner margin produced to form a small projection, weakly membranous on dorsal portion and ventral 1/3 of posterior marginal portion, bearing many short bristly hairs on posterodorsal portion and bristles on ventroproximal portion; inner side thickened on ventral 1/4 as in Fig. 2,C. Right hypandrial lobe with posterior margin produced to form a small projection near its middle, shorthaired on both lateral sides. Right process of right hypandrial lobe broad, longer than wide, nearly parallel-sided, with distal margin rounded, entirely shorthaired; inner side with a large flat ridge at distal portion. Left process of right hypandrial lobe bilobed distally; its ventral lobe markedly enlarged, with distal margin rounded. Tenth sternum with a flat process, which is tapering to rounded distal margin. Aedeagus of general type.

Body length: 2.6-2.9 mm.

Female. Differing from male as follows: Frons wider, frontal index about 0.41. Preocellar seta slightly closer to mediolateral than to anterolateral; an extra strong seta present below anterolateral on each side, the extra seta as long as preocellar, closer to antial than to anterolateral and slightly inward to them; frontal setulae sparser. Wing less tinged with grayish brown, veins more yellowish; costal index 0.49-0.50; costal sector index 0.89-0.90; wing length 2.25-2.64 mm, width 1.04-1.21 mm. Mid tibia with 2 anterior bristles as in male and with a dorsal row of 3-4 bristles.

Body length: 2.3-2.7 mm.

Holotype: ♂, Thudam (3500 m), E. Nepal, 21-30. vi. 1972, Malaise trap, Kyushu Univ. Coll.

Paratypes: 1♂, same locality and collector as holotype, 18. vi. 1972; 177♂♂8♀♀, same data as

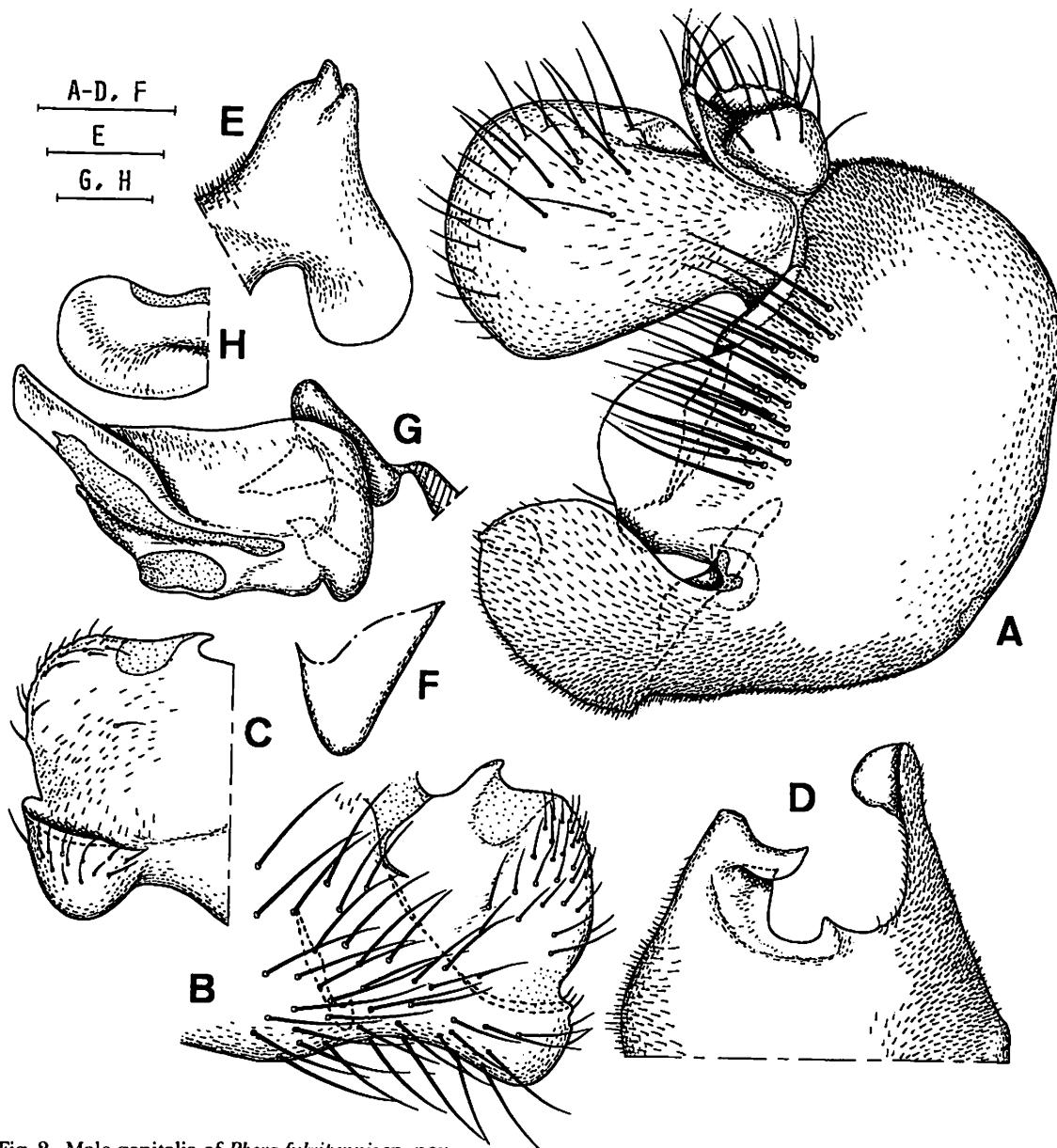


Fig. 2. Male genitalia of *Phora fulvipennis* sp. nov.

A, Genitalia in right lateral view; B, left surstyli in lateral view; C, ditto in inner view; D, distal portion of right hypandrial lobe in ventral view; E, left process of right hypandrial lobe in posterior view; F, projection of 10th sternum; G, aedeagus in right lateral view; H, distal portion of aedeagus in dorsal view. Scales: A-D, 0.1 mm; E-H, 0.05 mm.

holotype; 46♂♂4♀♀, same locality and collector as holotype, 1-4. vii. 1972; 32♂♂5♀♀, same locality and collector as holotype, 8-9. vii. 1972; 1♂, Walungchung Gola (3350 m), Taplejung, N. E. Nepal, 16. vi. 1962, T. YASUDA; 1♂, NE of Thudam (4000 m), E. Nepal, 30. vi. 1972, J. EMOTO; Uamvang, Tenzing; 3♂♂, Topke Gola (3700 m), E. Nepal, 8. vii. 1972, J. EMOTO.

Distribution. East Nepal.

Remarks. The male genitalia of this new species are very similar to those of Taiwanese *P. fenestrata* sp. nov., but the former has browner wings and the two anterior bristles

on its mid tibia, and the dorso-inner margin of its left surstyli has formed a small distinct process. In Nepal, *P. fulvipennis* is not likely to be confused with any other species owing to its brownish wings and wide frons.

Phora fenestrata sp. nov.

(Figs. 3, A-H; 17, C)

Male. Frons wide, frontal index 0.36, parallel-sided or very slightly narrowed posteriorly. Preocellar seta relatively long, 0.7×as long as mediolateral, equidistant

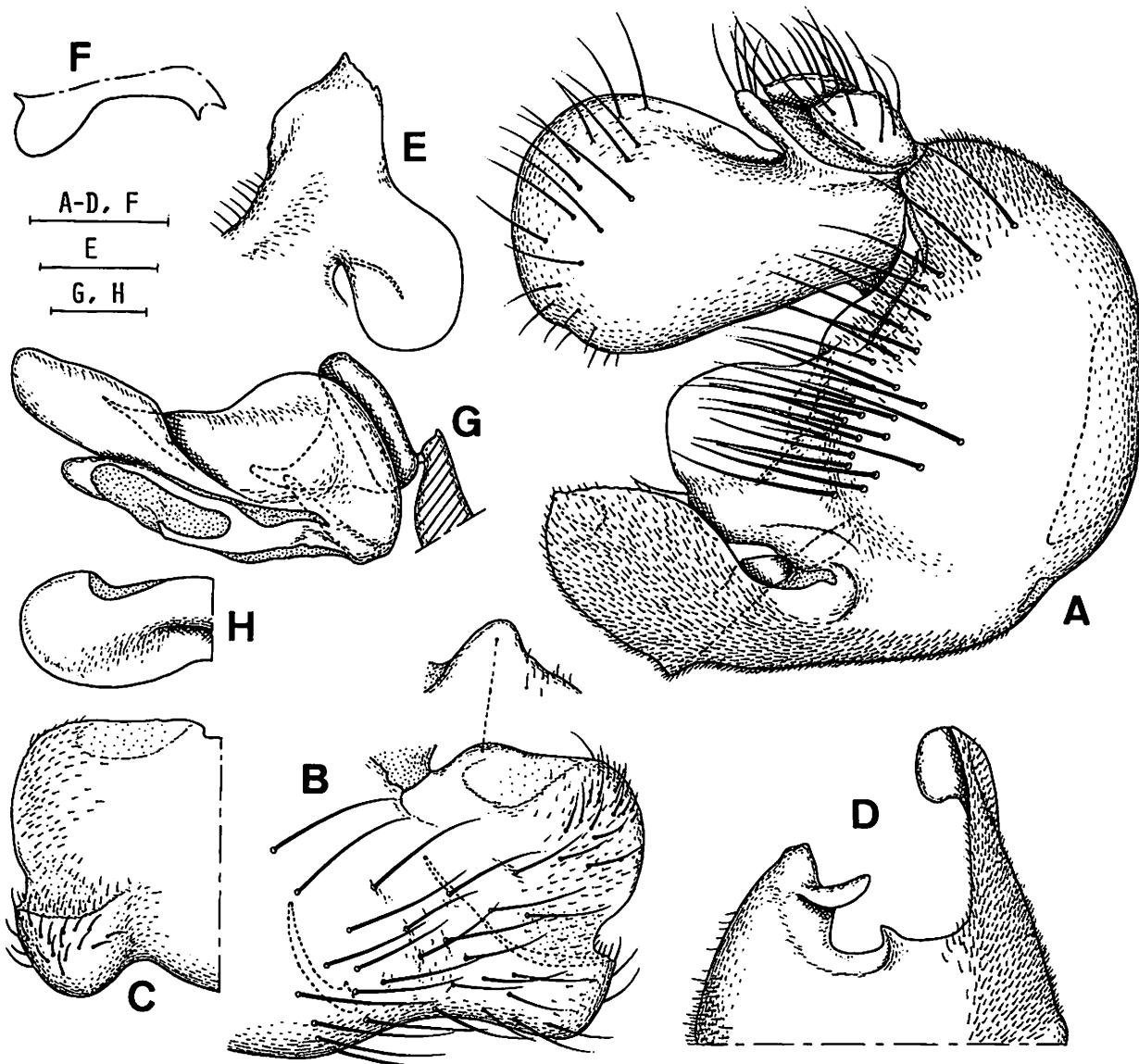


Fig. 3. Male genitalia of *Phora fenestrata* sp. nov.

A, Genitalia in right lateral view; B, left surstyli in lateral view; C, ditto in inner view; D, distal portion of right hypandrial lobe in ventral view; E, left process of right hypandrial lobe in posterior view; F, projection of 10th sternum; G, aedeagus in right lateral view; H, distal portion of aedeagus in dorsal view. Scales: A-D, 0.1 mm; E-H, 0.05 mm.

from anterolateral and mediolateral, inward to them; supra-antennal $0.6 \times$ as long as preocellar; frontal setulae somewhat bristly, $0.8-1.1 \times$ as long as supra-antennal, scattered on median portion of frons. Palpus with 5-6 short bristles. Scutum short setulose.

Wing hyaline, distinctly tinged with grayish brown, veins brown except pale brown A₁. Costa relatively long, costal index 0.54; 1st costal sector somewhat shorter than 2nd, costal sector index 0.92; vein M₂ nearly straight; vein M₃₊₄ weakly bisinuate; vein A₁ incomplete, with distal extreme disappearing; costal cilia $2.3-3.1 \times$ as long as width of 2nd costal sector; axillary margin with 4 hairs. Wing

length 2.40 mm, width 1.12 mm.

Legs black; fore leg dark brown on tibia, blackish brown on tarsus. Fore tibia $0.92 \times$ as long as 1st to 4th tarsomeres together, with a dorsal row of distinct setulae; fore tarsus moderately dilated, narrower than tip of fore tibia, relative lengths of fore tarsomeres approximately 19 : 11 : 10 : 9 : 8. Mid tibia with 1 anterior bristle and a dorsal row of 5-7 bristles. Hind tibia with 1 anterior bristle; ventroproximal prominence of hind femur relatively weak, with distal margin nearly straight.

Male genitalia shining black, very similar to those of the Japanese *P. amplifrons* and significant differences as

follows: Left surstyli concave at ventral 1/3 of posterior margin (deeply emarginate to form an U-shaped notch in *amplifrons*); inner side distinctly thickened on ventral 1/4 (less distinct in *amplifrons*). Right process of right hypandrial lobe with an inner large flat ridge at distal portion (much smaller in *amplifrons*). Upper lobe of left process of right hypandrial lobe extended dorsally and pointed (curved inwardly in *amplifrons*). Aedeagus rounded at apex in dorsal view (truncate in *amplifrons*).

Body length: 2.2-2.6 mm.

Female. Unknown.

Holotype: ♂, Meifeng-Tsuifeng (2200-2300 m), Nantou Hsien, Taiwan, 25. iv. 1981, K. OHARA, (KMNHIR200,220).

Paratypes: 1♂, same locality and date as holotype, H. TAKEMOTO; 1♂, Tsuifeng (2300 m), Nantou Hsien, Taiwan, 27. iv. 1981, K. OHARA.

Type depository: The type specimen is deposited in the collection of the Kitakyushu Museum of Natural History and Human History, Kitakyushu.

Distribution. Taiwan.

Remarks. This new species shows most of the same characters as the Japanese *P. amplifrons* GOTOH, 1985. However, the author is convinced that it represents a distinct species due to genital differences, as referred to in the above description.

Phora shirozui sp. nov.

(Figs. 4, A-G; 17, D)

Male. Frons moderate in width, frontal index 0.28-0.30, narrowed posteriorly, width at the level of mediolateral seta 0.73-0.75 of that at supra-antennal. Frontal setae markedly long; preocellar seta long, 0.7× as long as mediolateral, distinctly ventral to mediolateral, closer to anterolateral; supra-antennal seta 0.6 of preocellar in length; frontal setulae relatively long, bristly, 0.6-0.8× as long as supra-antennal, arranged in two rows on anterior 1/2 of frontal mesal surface; postocular setae long, progressively longer ventrally. Third antennal segment compressed laterally. Palpus with 6 short bristles. Scutum covered with longish setulae.

Wing hyaline, distinctly tinged with grayish brown, cells 1c and 2c more brownish; vein R₄₊₅ brownish yellow to yellowish brown, other veins yellowish brown except pale A₁. Costa relatively short, costal index 0.48-0.51; 1st costal sector slightly shorter than 2nd, costal sector index 0.90-0.97; veins M₂ and M₃₊₄ weakly bisinuate, the latter evanescent at distal extreme; vein A₁ incomplete, obsolescent at distal extreme; costal cilia very long, 3.8-4.6× as long as width of 2nd costal sector; axillary margin

with 6 hairs. Wing length 2.45-3.09 mm, width 1.12-1.37 mm.

Legs black; fore leg yellowish brown at tip of femur, whole tibia and tarsus, the latter darkened on dorsal surface. Fore tibia 0.85-0.92× as long as 1st to 4th fore tarsomeres together, with a dorsal row of longish setulae; fore tarsus moderately dilated, narrower than tip of fore tibia, relative lengths of fore tarsomeres approximately 27:15:13:11:10. Mid tibia with 2 anterior bristles and a dorsal row of 7-11 long bristles. Hind tibia with 1 anterior bristle; ventroproximal prominence of hind femur conspicuous, protruding 0.06 mm, with ventroproximal corner angulated, bearing several longish setulae on anterior surface.

Male genitalia shining black. Lateral lobe of epandrium as long as wide, with posterodorsal corner weakly produced dorsally and with distal margin weakly rounded. Right surstyli spatulate in lateral view, with upper distal margin semi-circularly rounded in lateral view, bearing sparse bristly hairs on posterodorsal portion, inner side with a flat ridge. Left surstyli dorsoproximally separated from epandrium by a shallow V-shaped membranous incision, the surstyli with posterior margin broadly emarginate, weakly produced on posterodorsal corner which bears short hairs, with dorso-inner margin weakly produced inwardly to form a small projection as in Fig. 4, B, bearing bristles on proximal portion; inner side thickened on ventrodistal portion. Right hypandrial lobe with posterior margin produced to form a small projection near its middle, shorthaired on both lateral sides. Right process of right hypandrial lobe large, longer than wide, parallel-sided in lateral view, with distal margin rounded and markedly serrate; inner side with a flat ridge at distal portion. Left process of right hypandrial lobe bilobed distally, T-shaped; upper lobe parallel-sided, with weak depression at dorsal portion, lower lobe tapering to rounded and finely serrate distal margin. Tenth sternum with a strip-like process, the process strongly produced ventrally on its left lateral 1/3. Aedeagus of general type; upper branch of Y-shaped extension of right lateral plate long, curved inwardly and sharply pointed at tip.

Body length: 2.1-3.0 mm.

Female. Differing from male as follows: Frons wider, parallel-sided, frontal index 0.39-0.42; preocellar seta equidistant from mediolateral and anterolateral, inward to them; frontal setulae sparser and shorter. Wing hyaline, slightly tinged with grayish brown, cells 1c, 2c and r₁ more brownish, veins more yellowish; costa shorter, costal index 0.45-0.46; 1st costal sector as long as 2nd or slightly longer, costal sector index 1.00-1.03; vein M₂ weakly curved on proximal 1/3, then straight to wing margin, wing length

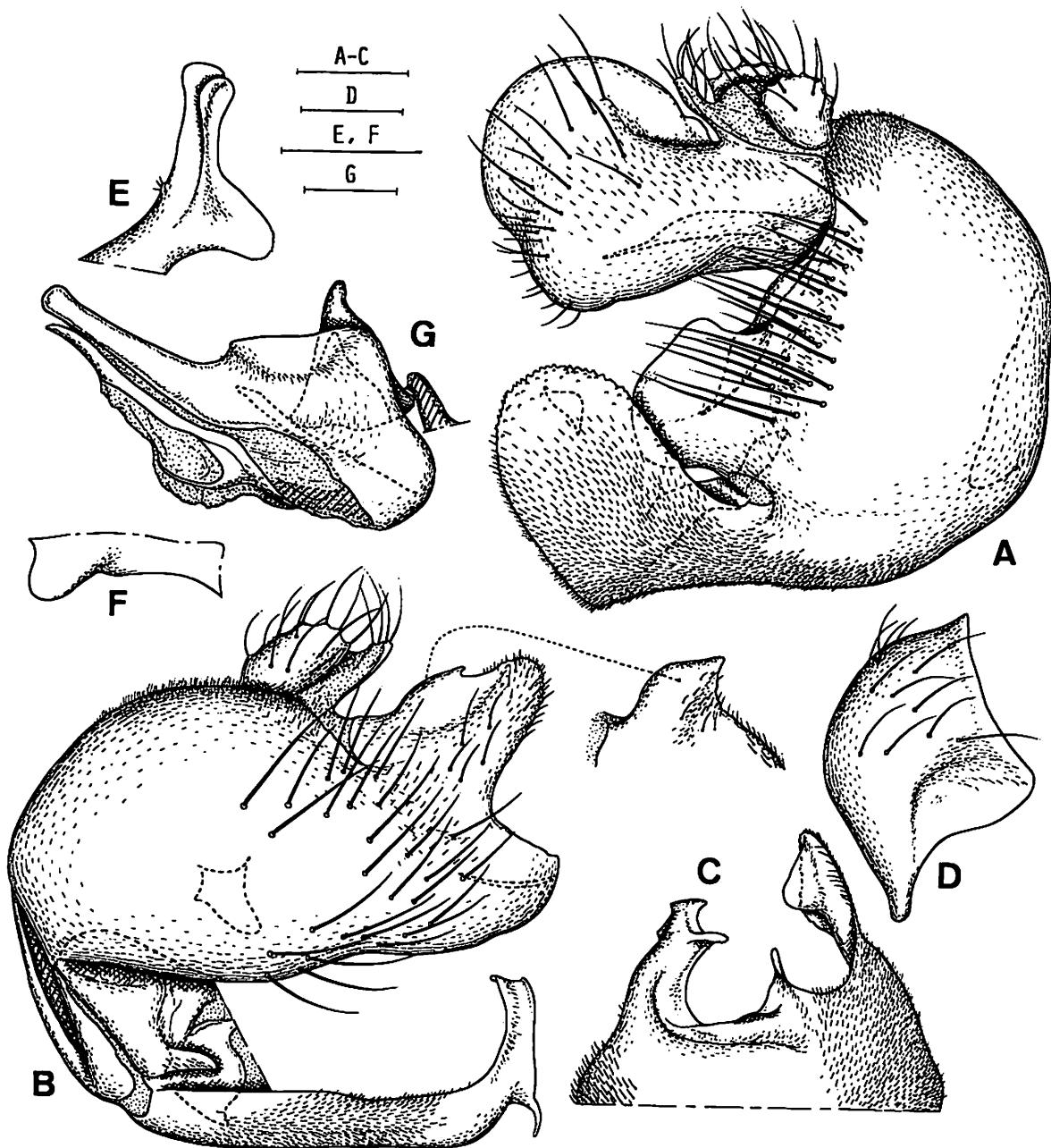


Fig. 4. Male genitalia of *Phora shirozui* sp. nov.

A, Genitalia in right lateral view; B, ditto in left lateral view; C, distal portion of right hypandrial lobe in ventral view; D, right surstyli in dorsal view; E, left process of right hypandrial lobe in posterior view; F, projection of 10th sternum; G, aedeagus in right lateral view. Scales A-F, 0.1 mm; G, 0.05 mm.

2.17-2.87 mm, width 1.02-1.30 mm. Fore tibia and tarsus more yellowish; mid tibia with 2 anterior bristles as in male and a dorsal row of 2-3 bristles.

Body length: 1.9-2.6 mm.

Holotype: ♂, Tungpu (2500 m), Lulinshan, Chiai Hsien, Taiwan, 2. iv. 1967, T. SHIROZU.

Paratypes: 7♂♂3♀♀, same locality and collector as holotype, 28. iii. 1967; 1♂2♀♀, same data as holotype; 1♂, same locality as holotype, 2. iv. 1965, T. SAIGUSA; 3♂♂,

Tatachia-anpu (2700 m), Lulinshan, Chiai Hsien, 1. iv. 1965, T. SAIGUSA; 12♂♂3♀♀, same locality, 10. iv. 1965, T. SAIGUSA; 5♂♂8♀♀, same locality, 3. iv. 1967, T. SHIROZU; 2♂♂1♀, Alishan, Chiai Hsien, 9. iv. 1965, T. SAIGUSA.

Distribution. Taiwan.

Remarks. As with the Palaearctic *P. convallium* SCHMITZ, 1928 and the Taiwanese *P. subconvallium* sp. nov., this new species has the left surstyli roundly and deeply emarginated on the posterior margin. But *P. shirozui* is

easily distinguished from the others because the posterodorsal corner of its left sursty whole is only weakly produced and rounded, while it has distinctly formed into a pointed process in *convallium* and *subconvallium*. In addition, *P. shirozui* has longer costal cilia and a greater number of long dorsal bristles on its mid tibia.

The specific name is dedicated to the late Prof. Emeritus T. SHIROZU of Kyushu University.

***Phora subconvallium* sp. nov.**

(Figs. 5, A-G; 17, E)

Male. Frons narrow, frontal index 0.27-0.28, narrowed posteriorly, width at the level of mediolateral seta 0.76-0.77 of that at supra-antennal. Frontal setae long; preocellar seta 0.7× as long as mediolateral, equidistant from mediolateral and anterolateral or slightly closer to the latter; supra-antennal seta 0.6 of preocellar in length; frontal setulae very short, 0.5-0.6× as long as supra-antennal, arranged in two rows. Third antennal segment laterally compressed. Palpus with 3-6 short bristles. Scutum covered with longish setulae.

Wing hyaline, distinctly tinged with grayish brown; veins yellowish brown except pale yellow A₁. Costa short, costal index 0.47-0.48; 1st costal sector slightly shorter than 2nd, costal sector index 0.93-0.97; vein M₂ weakly bisinuate; vein M₃₊₄ bisinuate; vein A₁ complete to wing margin; costal cilia moderate in length, 2.3-3.3× as long as width of 2nd costal sector; axillary margin with 6 hairs. Wing length 2.41-2.67 mm, width 1.13-1.24 mm.

Legs black; fore tibia brownish yellow to yellowish brown, fore tarsus brown on dorsal surface. Fore tibia 0.90× as long as 1st to 4th fore tarsomeres together, with a dorsal row of longish setulae; fore tarsus weakly dilated, narrower than tip of fore tibia, relative lengths of fore tarsomeres approximately 25 : 13 : 12 : 10 : 9. Mid tibia with 2-3 (mostly 2) anterior bristles and a dorsal row of 5-7 bristles. Hind tibia with 1 anterior bristle; ventroproximal prominence of hind femur strongly produced, protruding about 0.06 mm, with ventroproximal corner angulated, bearing several longish setulae on anterior surface.

Male genitalia shining black, similar to those of *P. convallium*. Lateral lobe of epandrium rectangular with rounded corners in lateral view, with posterior margin nearly straight (concave in *P. convallium*). Right sursty whole spatulate in lateral view, with distal margin semi-circularly rounded, bearing bristly hairs on posterodorsal corner; inner side with a flat ridge. Left sursty whole dorsoproximally with a shallow V-shaped membranous incision; its posterior margin less emarginated than in *P. convallium* and ventral 1/2 of the margin forming a distally tapering and rounded process, which is parallel-sided and roughly

rectangular in *P. convallium*. Right hypandrial lobe with posterior margin produced to form a small projection at its middle, shorthaired on both lateral sides. Right process of right hypandrial lobe large, longer than wide, parallel-sided (distally tapering in *P. convallium*) in lateral view, with distal margin rounded and weakly crenulated, entirely shorthaired; inner side with a flat ridge. Left process of right hypandrial lobe bilobed distally, T-shaped; upper lobe slender, with depression on dorsal portion, lower lobe weakly tapering to rounded and finely serrate distal margin. Tenth sternum with a strip-like process, the process produced on its left lateral 1/3. Aedeagus of general type, very similar to that of *P. convallium*.

Body length: 2.1-2.5 mm.

Female. Differing from male as follows: Frons wider, frontal index 0.35-0.38, parallel-sided; preocellar seta closer to mediolateral than to anterolateral; frontal setulae sparser. Wing hyaline, slightly tinged with grayish brown, veins more yellowish; costa shorter, costal index 0.41-0.43, 1st costal sector slightly shorter than 2nd or with same length, costal sector index 0.96-1.00; vein M₂ weakly bisinuate; costal cilia longer than in male; wing length 2.17-2.40 mm, width 0.99-1.10 mm. Fore tarsus more strongly dilated, 2nd and 3rd tarsomeres as wide as tip of fore tibia or slightly wider, 5th tarsomere distinctly smaller than other ones. Mid tibia with 2 anterior bristles as in male and a dorsal row of 3 bristles.

Body length: 2.0-2.7 mm.

Holotype: ♂, Tsuifeng (2300 m), Nantou Hsien, Taiwan, 16. iv. 1984, T. GOTOH, (KMNHIR 200, 221).

Paratypes: 25♂♂, same locality as holotype, 27. iv. 1981, K. OHARA; 113♂♂, same data as holotype; 66♂♂, same locality as holotype, 17. iv. 1984, T. GOTOH; 4♀♀, Meifeng-Tsuifeng, Nantou Hsien, 25. iv. 1981, H. TAKEMOTO; 1♂♂2♀♀, same locality and date, K. OHARA; 150♂♂3♀♀, same locality and date, K. OHARA; 9♂♂, Alishan (2700 m), Chiai Hsien, 9. iv. 1965, T. SAIGUSA; 1♂, same locality and date, S. MIYAMOTOI; 29♂♂, same locality, 13. iv. 1984, K. OHARA; 48♂♂1♀, same locality and date, T. GOTOH.

Type depository: The type specimen is deposited in the collection of the Kitakyushu Museum of Natural History and Human History, Kitakyushu.

Distribution. Taiwan.

Remarks. This new species is the closest ally of the Palaearctic *P. convallium* because they share a condition in which the left sursty whole bears a long and pointed process on the posterodorsal corner, but the former has the 1st costal sector shorter than 2nd (distinctly longer in *P. convallium*) and the male genitalia differ as mentioned in the above description. Among Taiwanese species, *P. subconvallium* may be confused only with *P. shirozui* sp. nov.

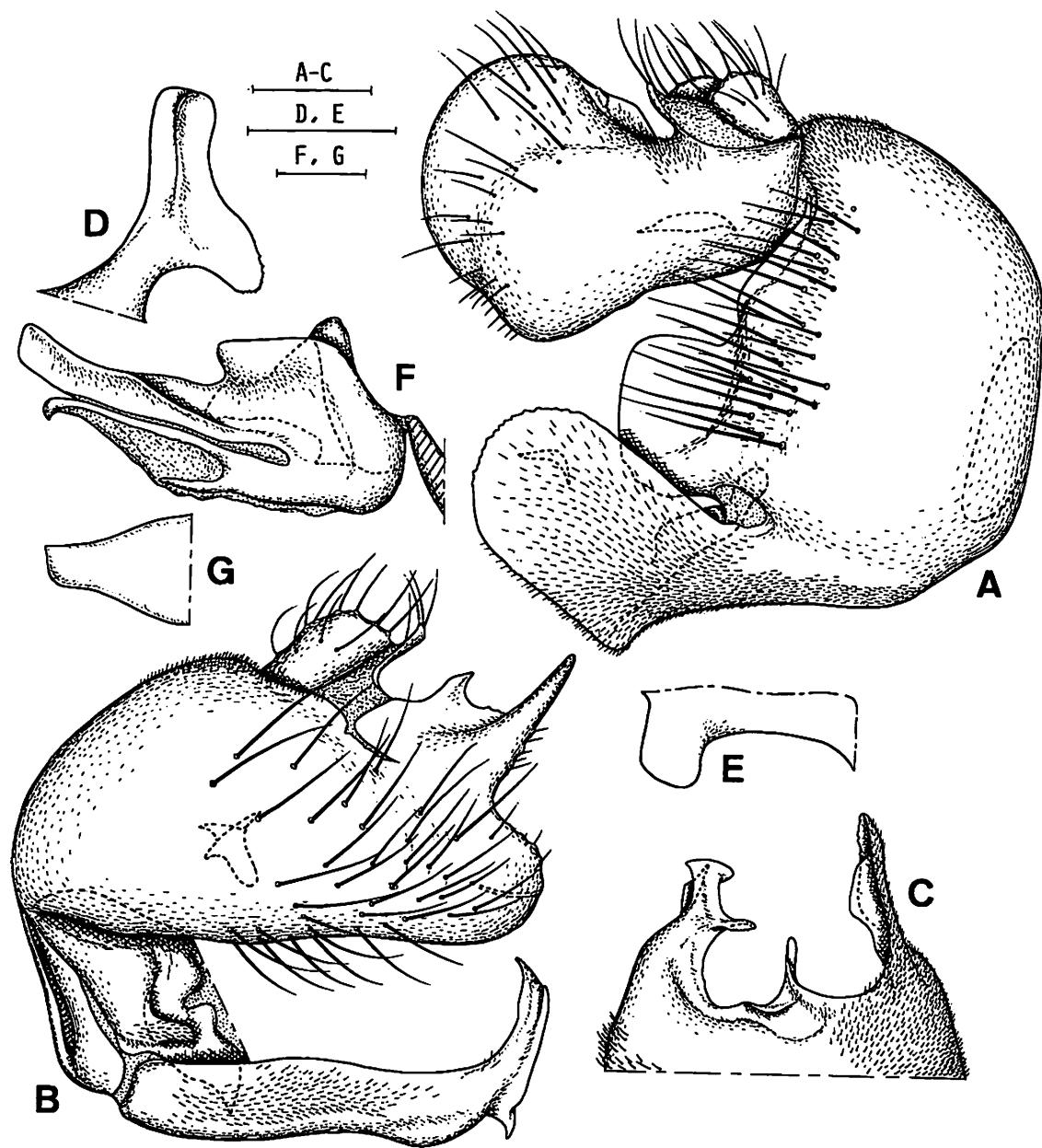


Fig. 5. Male genitalia of *Phora subconvallium* sp. nov.

A, Genitalia in right lateral view; B, ditto in left lateral view; C, distal portion of right hypandrial lobe in ventral view; D, left process of right hypandrial lobe in posterior view; E, projection of 10th sternum; F, aedeagus in right lateral view; G, distal portion of aedeagus in dorsal view. Scales: A-E, 0.1 mm; F, G, 0.05 mm.

due to the mid tibia with 2 anterior bristles on the upper half, the brownish wings and the short costa, but it can be sharply distinguished from the latter by the left surstyli bearing a sharply pointed process, which is easily visible even in dried specimens.

P. subconvallium is distributed in the evergreen forests of high altitude mountains. The author has frequently observed swarms that formed just under the tip of a branch, where males were engaged in an usual slow zigzag

flight.

***Phora nepalensis* sp. nov.**
(Figs. 6, A-G; 17, F)

Male. Frons somewhat wide, frontal index 0.32, distinctly narrowed posteriorly, width at the level of mediolateral seta 0.70-0.76 of that at supra-antennal. Preocellar seta very weak, 0.4-0.5× as long as mediolateral,

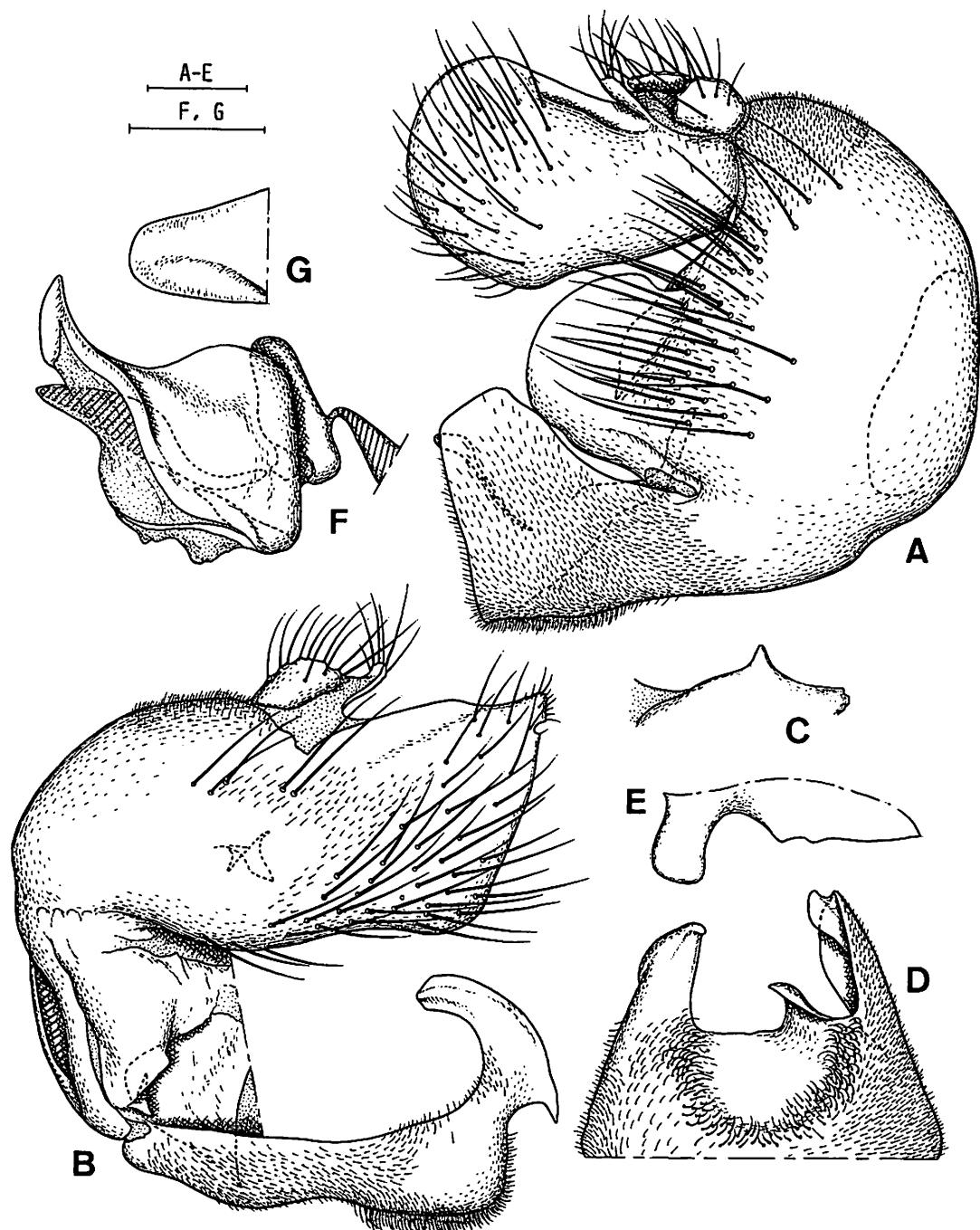


Fig. 6. Male genitalia of *Phora nepalensis* sp. nov.

A, Genitalia in right lateral view; B, ditto in left lateral view; C, dorso-inner margin of left surstylius in dorsal view; D, distal portion of right hypandrial lobe in ventral view; E, projection of 10th sternum; F, aedeagus in right lateral view; G, distal portion of aedeagus in dorsal view. Scales: 0.1 mm.

ventral to mediolateral, closer to anterolateral; supra-antennal seta 0.8 of preocellar in length; frontal setulae long, bristly, $0.8-1.8 \times$ as long as preocellar, scattered on anterior 1/2 of frons. Palpus with 3 short bristles on distal portion. Scutum covered with longish setulae.

Wing hyaline, slightly tinged with grayish brown; vein R_{4+5} dark yellow to yellowish or slightly reddish brown,

other veins brown except pale brown A_1 . Costa long, costal index 0.55-0.56; 1st costal sector distinctly shorter than 2nd, costal sector index 0.76-0.78; veins M_2 and M_{3+4} weakly bisinuate; vein A_1 incomplete, disappearing near wing margin; costal cilia long, $3.0-5.0 \times$ as long as width of 2nd costal sector, axillary margin with 4-5 hairs. Wing length 3.30-3.38 mm, width about 1.47 mm.

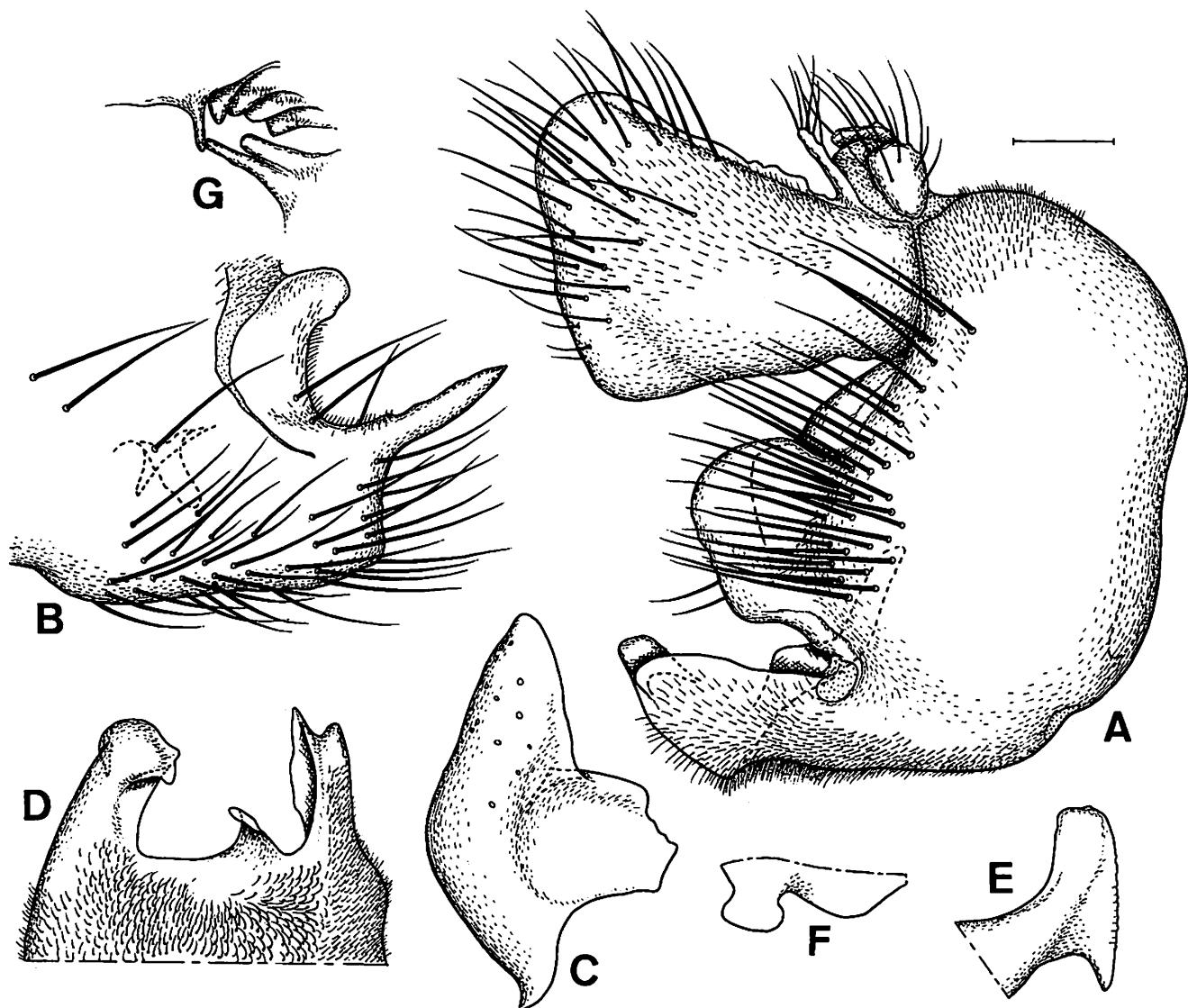


Fig. 7. Male genitalia of *Phora capillosa* SCHMITZ

A, Genitalia in right lateral view; B, left surstyli in lateral view; C, right surstyli in dorsal view; D, distal portion of right hypandrial lobe in ventral view; E, left process of right hypandrial lobe in lateral view; F, projection of 10th sternum; G, inner processes of right surstyli. Scales: 0.1 mm.

Legs black; fore leg brownish yellow at tip of femur and whole tibia, fore tarsus brown. Fore tibia $0.88 \times$ as long as 1st to 4th fore tarsomeres together with a dorsal row of short bristly setulae; fore tarsus weakly dilated distinctly narrower than tip of fore tibia, relative lengths of fore tarsomeres approximately 27 : 17 : 13 : 12 : 11. Mid tibia with 2 anterior bristles and a dorsal row of 6-7 long bristles. Hind tibia with 2 anterior bristles ventroproximal prominence of hind femur conspicuous, protruding about 0.04 mm.

Male genitalia shining black, right hypandrial lobe brownish yellow on left lateral portion. Lateral lobe of epandrium broad, hemi-circularly rounded on distal margin in lateral view. Right surstyli widened distally on

proximal 2/3, and then tapered to rounded distal margin, bearing many long bristles on distal 1/2. Left surstyli dorsoproximally with a shallow V-shaped membranous incision, roughly parallel-sided in lateral view, with obliquely straight posterior margin, angulated on posterodorsal corner which is serrate and shorthaired, with dorso-inner margin produced to form a small and sharply pointed triangular projection, bearing many bristles on ventral 1/2; inner side without ridge, smooth. Right hypandrial lobe with posterior margin straight in ventral view, the margin produced to form a large projection near base of right process, having an excavation surrounded by dense longish hairs on mesal surface of posterior submarginal portion. Right process of right

hypandrial lobe large, oriented posterodorsally, trapezoidal in lateral view, entirely shorthaired; inner side with a well developed ridge at posteroventral corner. Left process T-shaped in lateral view; dorsal lobe slender, parallel-sided, ventral lobe small. Tenth sternum with a strip-like process, the process strongly produced on its left lateral 1/3 as in Fig. 6, F. Aedeagus: right lateral plate with a slender extension on its oblique distal margin; left lateral plate enlarged.

Body length: 2.6 mm.

Female. Unknown.

Holotype: ♂, Thudam (3500 m), E. Nepal, 21-30. vi. 1972, Malaise trap, Kyushu Univ. Coll.

Paratypes: 2♂♂, same data as holotype.

Distribution. East Nepal.

Remarks. This new species seems to be related to the Holarctic *P. occidentata* MALLOCH, 1912 and *P. capillosa* in that they both have a right hypandrial lobe with an excavation surrounded by dense longish hairs on a mesal posterior surface. In addition to the longer costa and the longer costal cilia, however, its left sursty whole tibia. lus with obliquely straight posterior margin makes *P. nepalensis* very distinct from the others. So far as Nepal is concerned, *P. nepalensis* is easily distinguished from any other species by the existence of two anterior bristles on its hind tibia.

Phora capillosa SCHMITZ

(Fig. 7, A-G)

Phora capillosa SCHMITZ, 1933, Ark. Zool. 27B (2): 1; 1940, Nat. Maandbl. 29: 128; 1953, Flieg. palaearkt. Reg. 33: 314. -LIU and CHOU, 2002, Entomotaxonomia, 16: 64.

Male genitalia. Epandrium furnished with long bristles on posterolateral portion of right side. Lateral lobe of epandrium relatively small, slightly wider than long, with distal margin rounded. Right sursty whole tibia. lus roughly elongate trapezoidal, strongly widened distally in lateral view with posterior margin obliquely straight and with posterodorsal corner rounded, bearing many bristles on posterior 1/2; inner side with a weak ridge on ventroproximal portion, bearing several longitudinal ridges and pointed strong projections (Fig. 7, G) on posterodorsal submarginal portion. Left sursty whole tibia. dorsoproximally separated from epandrium by a deep narrow membranous incision, the sursty whole tibia. small, markedly shortened on dorsal 1/2, characteristic in producing into a sharply pointed long process at middle of posterior margin, with dorsal 1/2 of posterior margin markedly concave, bearing many long bristles on ventral 1/3; inner side with a weak long ridge. Right hypandrial lobe with posterior margin produced to form a projection near base of right process, with a weak excavation

surrounded by longish hairs on mesal surface of posterior 1/3, entirely shorthaired. Right process of right hypandrial lobe shovel-like in shape, entirely shorthaired, with an inner strong flat ridge at distal portion. Left process short, weakly bilobed as shown in Fig. 7, E, lower lobe pointed distally. Tenth sternum with a strip-like process, the process strongly produced posteroventrally on its left half. Aedeagus of general type; upper branch of Y-shaped extension long.

Specimen examined. 1♂(Paratype), Kina, S. Kansu, SVEN HEDINS Exp. ctr. Asien, HUMMEL leg. (det. H. SCHMITZ).

Distribution. China.

Remarks. This species may be related to the Holarctic *P. occidentata* and the Nepalese *P. nepalensis* sp. nov. by the reason mentioned in the remarks on *P. nepalensis*, but it is sharply distinguished from them by the left sursty whole tibia. lus, which bears a long and pointed process on its posterior margin.

Phora acerosa sp. nov.

(Figs. 8, A-H; 17, G)

Male. Frons moderate in width, frontal index 0.31, strongly narrowed posteriorly, width at the level of mediolateral seta 0.62-0.64 of that at supra-antennal. Preocellar seta very weak, 0.5-0.7× as long as mediolateral, ventral to mediolateral, distinctly closer to mediolateral than to anterolateral; supra-antennal seta 0.9 of preocellar in length; frontal setulae somewhat short, 0.5-1.0× as long as supra antennal scattered or arranged in two rows. Palpus with 4 short bristles. Scutum short setulose.

Wing hyaline, very slightly tinged with grayish brown; vein R₄₊₅ reddish brown, other veins yellowish brown except pale yellow A₁. Costa moderate in length, costal index 0.51-0.53; 1st costal sector shorter than 2nd, costal sector index 0.74-0.85; vein M₂ weakly bisinuate, vein M₃₊₄ distinctly bisinuate; vein A₁ incomplete, disappearing near wing margin; costal cilia 2.3-3.7× as long as width of 2nd costal sector; axillary margin with 5-9 hairs. Wing length 2.23-2.91 mm, width 1.02-1.33 mm.

Legs black; fore leg yellowish brown at tip of femur, whole tibia and tarsus, 2nd to 5th fore tarsomeres progressively darkened distally. Fore tibia 0.82-0.84× as long as 1st to 4th fore tarsomeres together, with a dorsal row of spine-like short hairs; fore tarsus moderately dilated, 2nd and 3rd tarsomeres slightly narrower than tip of fore tibia or in same width with the latter, relative lengths of fore tarsomeres approximately 28 : 15 : 12 : 10 : 9. Mid tibia with 1 anterior bristle and a dorsal row of 5-6 bristles. Hind tibia with 1 anterior bristle; ventroproximal prominence of hind femur very slightly produced, with a

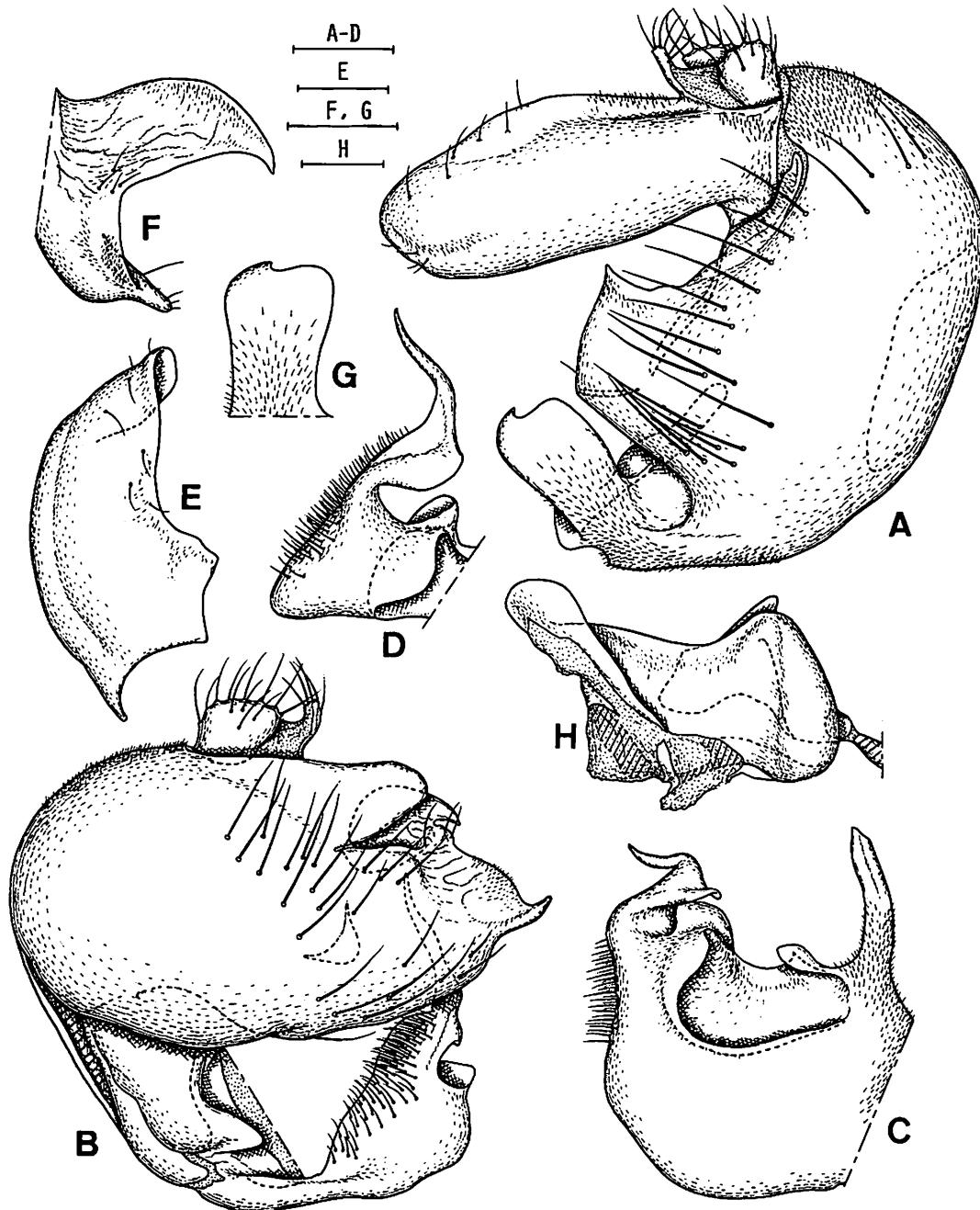


Fig. 8. Male genitalia of *Phora acerosa* sp. nov.

A, Genitalia in right lateral view; B, ditto in left lateral view; C, right hypandrial lobe in ventral view; D, left process of right hypandrial lobe in posterior view; E, right surstylus in dorsal view; F, left surstylus in posterodorsal view; G, right process of right hypandrial lobe in shape; H, aedeagus in right lateral view. Scales: A-G, 0.1 mm; H, 0.05 mm.

few longish setulae on anterior surface.

Male genitalia shining black. Lateral lobe slightly tapering distally, with posterior margin nearly straight, sharply angulated on posteroventral corner, and slightly produced dorsally and pointed on posterodorsal corner. Right surstylus elongate ovate in lateral view, bearing several longish hairs on distal marginal portion. Left

surstylus dorsoproximally separated from epandrium by a deep membranous incision, the surstylus gradually tapering distally, produced and pointed on posteroventral corner, with dorso-inner margin strongly produced inwardly to form a elongate triangular extension which is sharply pointed at its tip, with a weak excavation on rugose dorsal portion. Epandrial lobe well developed, covering

dorsal portion of left sursty whole in lateral view tapering to rounded distal margin. Right hypandrial lobe strongly and widely excavated on posterior 2/5 of ventromesal surface. Right process of right hypandrial lobe small, weakly constricted at base, with rounded corners, with posterior margin produced at its middle to form a weak hook-like projection. Left process of right hypandrial lobe very unique in strongly producing dorsally on posterodorsal portion to form a slender, long and sharply pointed projection, furnished with longish, yellowish hairs on dorsolateral surface of left side to dorsal surface. Tenth sternum with left lateral margin produced to form a weak projection. Aedeagus of general type; upper branch of Y-shaped extension of right lateral plate shortened.

Body length: 2.0-2.6 mm.

Female. Differing from male as follows: Frons wider, frontal index 0.33-0.35, parallel-sided; preocellar seta in same level with mediolateral or slightly ventral to it; frontal setulae shorter. Wing clear veins M₁, M₂ and M₃₊₄ more yellowish; costa shorter, costal index 0.47-0.48, costal sector index 0.83-0.84; vein M₂ straight on distal 1/2; vein M₃₊₄ weakly bisinuate; wing length 2.36-2.54 mm, width 1.09-1.18 mm. Fore tibia and tarsus yellowish; mid tibia with a dorsal row of 3 bristles.

Body length: about 2.6 mm.

Holotype: ♂, Nanshanchi (650-700 m), Taiwan, 22 iv. 1981, H. TAKEMOTO, (KMNHIR200,222).

Paratypes: [TAIWAN] 5♂♂8♀♀, same data as holotype; 7♂♂10♀♀, Meifeng-Tsuifeng (2200-2300 m), Nantou Hsien 25. iv. 1981, K. OHARA; 3♂♂15♀♀, same locality and date, H. TAKEMOTO; 1♂♂1♀ (in coitus), Tatachianpu (2700 m), Chiai Hsien, 23. vi. 1941, T. SHIROZU; 1♂, Kanshirei, Chiai Hsien, 6. iv. 1965, T. SAIGUSA. [NEPAL] 4♂♂, Chomro, 6. v. 1983, H. HARA; 1♀, same locality and collector, 8. v. 1983.

Type depository: The type specimen is deposited in the collection of the Kitakyushu Museum of Natural History and Human History, Kitakyushu.

Distribution. Taiwan, Nepal.

Remarks. So far as Taiwan and Nepal are concerned, this new species can only be confused with *P. lacunifera* GOTOH since they resemble each other in wing color, venation and body size, in addition to having 1 anterior bristle on the mid tibia. Its male genitalia, however, make it very distinct from the latter.

P. acerosa is found around evergreen forests or clumps of trees from low to high altitude mountains in Taiwan.

Phora acuminata sp. nov.

(Figs. 9, A-I; 17, H)

Male. Frons somewhat wide, frontal index 0.31-0.32,

narrowed posteriorly, width at the level of mediolateral seta 0.76-0.78 of that at supra-antennal. Preocellar seta weak, 0.5-0.6× as long as mediolateral, ventral to mediolateral, closer to mediolateral than to anterolateral; supra-antennal 0.8 of preocellar in length; frontal setulae sparse, short, 0.6-0.9× as long as supra-antennal, roughly arranged in two rows. Palpus with 4 bristles. Scutum short setulose.

Wing hyaline, slightly tinged with brown; cells c₁, c₂ and r₁ more brownish; vein R₄₊₅ reddish brown, other veins pale brown. Costa relatively long, costal index 0.55; 1st costal sector markedly shorter than 2nd, costal sector index 0.67-0.71; vein M₂ and M₃₊₄ bisinuate; vein A₁ complete to wing margin; costal cilia 2.5-3.0× as long as width of 2nd costal sector; axillary margin with 4 hairs. Wing length 2.95-3.01 mm, width 1.33-1.40 mm.

Legs black; fore leg yellowish brown at tip of femur, whole tibia and tarsus, the latter darkened on dorsal surface. Fore tibia 0.91× as long as 1st to 4th fore tarsomeres together, with a dorsal row of longish setulae; fore tarsus somewhat dilated, narrower than tip of fore tibia, relative lengths of fore tarsomeres approximately 23 : 13 : 11 : 10 : 10. Mid tibia with 1 anterior bristle and a dorsal row of 3 bristles. Hind tibia with 1 anterior bristle; ventroproximal prominence of hind femur indiscernible.

Male genitalia shining black, right surstylus brown. Lateral lobe of epandrium tapering distally, with dorsal margin concave, with posterodorsal and posteroventral corners angulated, weakly produced at ventral 1/3 of posterior margin in lateral view. Right surstylus somewhat slender, nearly parallel-sided in lateral view, with posteroventral corner weakly produced ventrally and rounded in lateral view, bearing bristly hairs on distal 1/3. Left surstylus dorsoproximally with a shallow membranous incision, with ventrodistal margin rounded, greatly produced posteriorly and inwardly at posterodorsal corner into a long process which is tapering distally and sharply pointed at tip; inner side (Fig. 9, D, E) strongly produced inwardly on dorsal submarginal portion to form a large projection which is strongly excavated on its dorsal surface, bearing a flat projection near posterodorsal corner, the projection tapered to rounded distal margin. Right hypandrial lobe widely and strongly excavated on posterior 2/3 of ventromesal surface, the excavation with right lateral margin weakly produced ventrally. Right process of right hypandrial lobe roughly rectangular in lateral view, weakly constricted at base, with posterodorsal corner rounded and posteroventral corner angulated. Left process of right hypandrial lobe with dorsodistal portion strongly curved outwardly and produced to form a hook-like projection, shorthaired on dorsolateral portion of left side. Aedeagus without Y-shaped extension of right

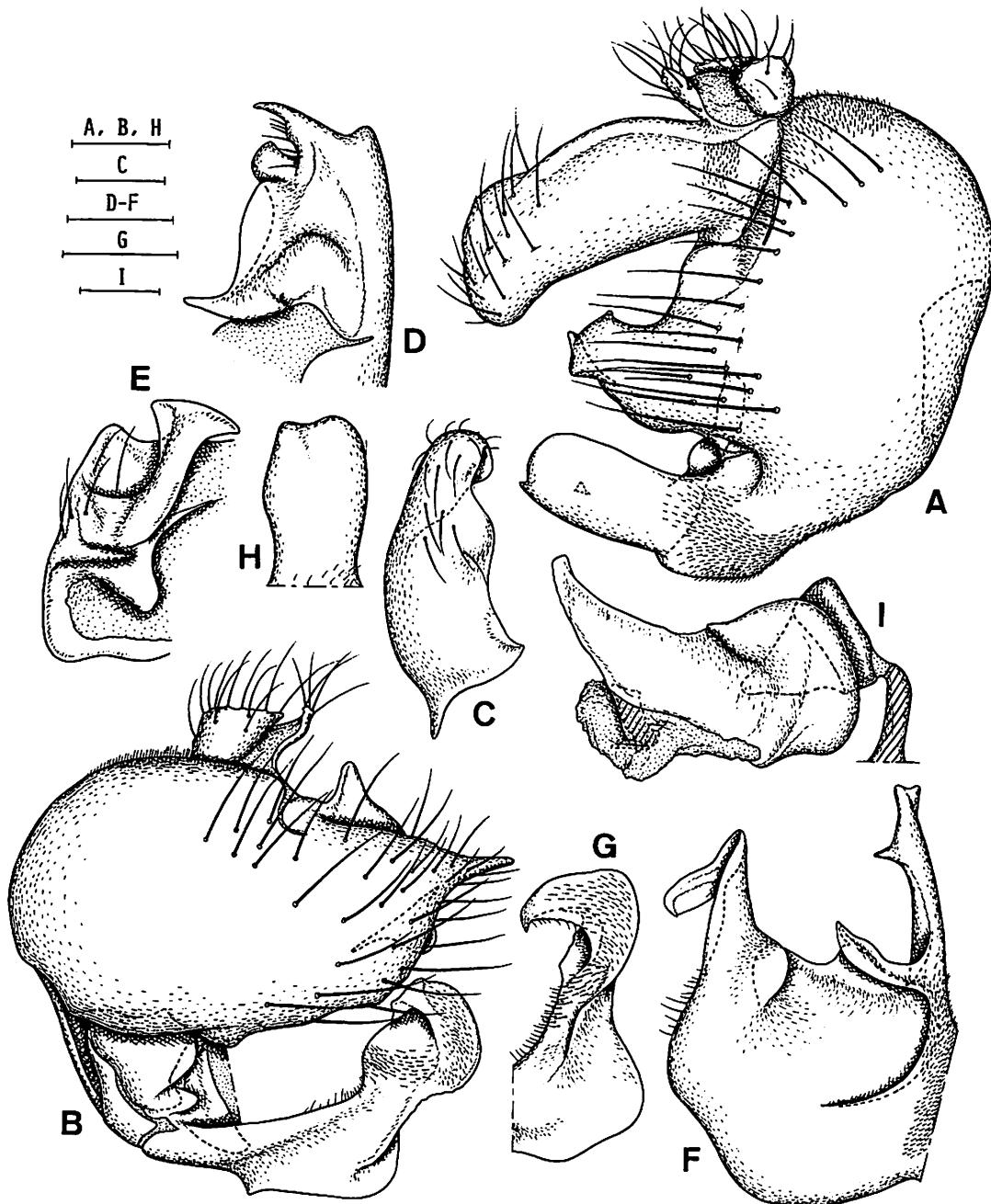


Fig. 9. Male genitalia of *Phora acuminata* sp. nov.

A, Genitalia in right lateral view; B, ditto in left lateral view; C, right surstyli in dorsal view; D, left surstyli in dorsal view; E, ditto in inner view; F, right hypandrial lobe in ventral view; G, left process of right hypandrial lobe in posterolateral view; H, right process of right hypandrial lobe in shape; I, aedeagus in right lateral view.
Scales: A-H, 0.1 mm; I, 0.05 mm.

lateral plate, carrying a U-shaped sclerite on ventral membranous portion.

Body length: 2.7-2.9 mm.

Female. Unknown.

Holotype: ♂, Dobang Kharka (2400 m), E. Nepal, 23-25. x. 1971, Malaise trap, A. NAKANISHI.

Paratypes: 1♂, same locality and collector as holotype, 20-22. x. 1971; 1♂, same locality and collector as holotype,

28. x. 1971.

Distribution. East Nepal.

Remarks. This new species is undoubtedly related to the Taiwanese *P. taiwana* sp. nov. because the structures of the left surstyli and the hook-like left process of the right hypandrial lobe are unique to these two species. But they are clearly distinguished from one another by the details of male genitalia. Among the Nepalese autumn species, *P.*

acuminata is distinct in having only 1 anterior bristle on the mid tibia.

***Phora taiwana* sp. nov.**

(Figs. 10, A-I; 18, A)

Male. Frons moderate in width, frontal index 0.29-0.31, strongly narrowed posteriorly, width at the level of mediolateral seta 0.69-0.74 of that at supra-antennal. Preocellar seta somewhat short, 0.6× as long as mediolateral, ventral to mediolateral, closer to mediolateral than to anterolateral; supra-antennal seta 0.6 of preocellar in length; frontal setulae sparse, relatively long 1.0-1.3× as long as supra-antennal, arranged in two rows; postocular setae long, progressively longer ventrally. Third antennal segment weakly compressed laterally. Palpus with 6-7 short bristles. Scutum covered with longish setulae.

Wing hyaline, markedly tinged with brown, in some specimens slightly tinged with grayish brown; vein R₄₊₅ yellowish brown, other veins brown except yellow A₁. Costa long, costal index 0.56-0.57; 1st costal sector distinctly shorter than 2nd, costal sector index 0.73-0.77; vein M₂ weakly bisinuate; vein M₃₊₄ distinctly curved on distal 1/3; vein A₁ complete to wing margin; costal cilia relatively long, 2.0-4.3× as long as width of 2nd costal sector; axillary margin with 4-5 hairs. Wing length 2.95-3.43 mm, width 1.36-1.57 mm.

Legs black; fore leg brownish yellow at tip of femur, whole tibia and tarsus, the latter darkened on dorsal surface. Fore tibia 0.91× as long as 1st to 4th tarsomeres together, with a dorsal row of spine-like strong setulae; fore tarsus weakly dilated, distinctly narrower than tip of fore tibia, relative lengths of fore tarsomeres approximately 29 : 15 : 14 : 12 : 11. Mid tibia with 2 anterior bristles and a dorsal row of 5-7 bristles. Hind tibia with 1 anterior bristle; ventroproximal prominence of hind femur indiscernible, the femur shallowly excavated subbasally.

Male genitalia shining black, right surstyli yellowish brown and slightly reddish. Lateral lobe of epandrium narrow, with margins irregularly sinuate as in Fig. 10, A. Right surstylus somewhat slender, with posteroventral corner weakly produced ventrally and rounded in lateral view, with sparse longish hairs on distal 1/3. Left surstylus dorsoproximally with a shallow membranous incision, with ventrodistal margin broadly rounded, produced posteriorly and inwardly at posterodorsal corner to form a sharply pointed projection, with dorsal margin produced posterodorsally to form a flat extension which is tapering to its rounded distal margin; inner side (Fig. 10, C-D) strongly produced inwardly on dorsoproximal portion to form a large projection which markedly excavated on its

dorsal surface with posterodorsal corner produced ventrally and inwardly to form a slender projection, which is tapering to rounded distal margin. Right hypandrial lobe strongly and widely excavated on posterior 1/2 of ventromesal surface, the excavation with right lateral margin weakly produced ventrally. Right process of right hypandrial lobe long and somewhat slender, gradually tapering to weakly pointed tip in lateral view; inner side with a weak ridge. Left process of right hypandrial lobe slender, strongly twisted outwardly and produced on dorsodistal portion to form a hook-like projection, shorthaired on dorsolateral surface of left side. Aedeagus without Y-shaped extension of right lateral plate, carrying a U-shaped sclerite on ventral membranous portion.

Body length: 2.9-3.9 mm.

Female. Differing from male as follows: Frons wider, frontal index about 0.35, parallel-sided, frontal setulae scattered. Wing hyaline, slightly tinged with grayish brown, vein R₄₊₅ yellowish, other veins pale brown; costa shorter, costal index about 0.52, costal sector index 0.74; vein M₂ weakly curved on proximal 1/2, then nearly straight or very weakly bisinuate, vein M₃₊₄ weakly bisinuate. Wing length 3.32 mm width 1.49 mm. Mid tibia with 2 anterior bristles as in male and a dorsal row of 3 bristles.

Body length: about 3.2 mm.

Holotype: ♂, Tsuifeng (2300 m), Nantou Hsien, Taiwan, 27. iv. 1981, K. OHARA, (KMNHIR200,223).

Paratypes: 7♂♂1♀, same locality as holotype, 16. iv. 1984, T. GOTOH; 16♂♂3♀♀, same locality as holotype, 17. iv. 1984, T. GOTOH; 32♂♂1♀♀, same data as holotype; 2♂♂, Tatachia-anpu (2700 m), Lulinshan, Chiai Hsien, 10. iv. 1965, T. SAIGUSA; 1♂, Tongpu (2500 m), Lulinshan, Chiai Hsien, 28. iii. 1967, T. SHIROZU; 8♂♂, Meifeng-Tsuifeng (2300 m), Nantou Hsien, 25. iv. 1981, K. OHARA; 1♀, same locality and date, H. TAKEMOTO; 1♂, Fenchihu, Chiai Hsien, 1. iii. 1982, H. HARA; 1♂, Alishan (2300 m), Chiai Hsien, 13. iv. 1984, T. GOTOH.

Type depository: The type specimen is deposited in the collection of the Kitakyushu Museum of Natural History and Human History, Kitakyushu.

Distribution. Taiwan.

Remarks. This new species is the closest ally of the Nepalese *P. acuminata* sp. nov. because of their similarly structured male genitalia. But *P. taiwana* has a much larger body, the two anterior bristles on mid tibia and the male genitalia different in detail.

The author observed male adults flying in swarms, where they engaged in rapid flight like that of muscid flies, differing from the usual slow zigzag flight. The swarm was formed in a space (about 2-5 m above the ground) at a distance from the trees.

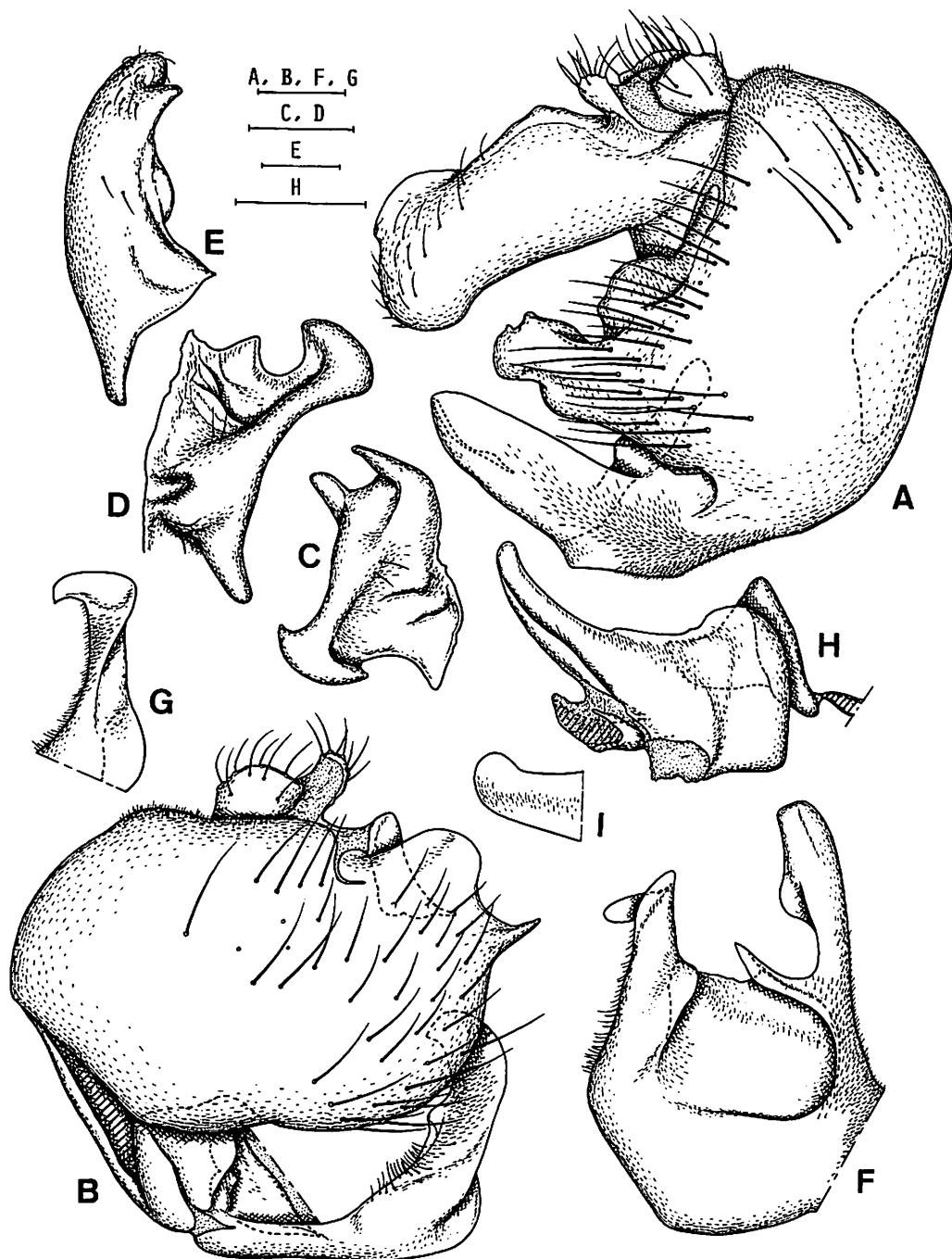


Fig. 10. Male genitalia of *Phora taiwana* sp. nov.

A, Genitalia in right lateral view; B, ditto in left lateral view; C, left surstyli in dorsal view; D, ditto in inner view, somewhat posteriorly; E, right surstyli in dorsal view; F, right hypandrial lobe in ventral view; G, left process of right hypandrial lobe in posterolateral view; H, aedeagus in right lateral view; I, distal portion of aedeagus in dorsal view. Scales: 0.1 mm.

Phora paricauda sp. nov.
(Figs. 11, A-G; 18, B)

Male. Frons relatively narrow, frontal index 0.28-0.29, narrowed posteriorly, width at the level of mediolateral seta 0.74-0.77 of that at supra antennal. Preocellar seta

long, 0.6-0.7× as long as mediolateral, distinctly or slightly ventral to mediolateral, slightly closer to mediolateral; supra-antennal seta 0.6 of preocellar in length; frontal setulae long, bristly, 0.8-1.7× as long as supra-antennal, scattered on anterior 3/5 of frons. Palpus with 5-6 short bristles on distal portion. Scutum covered with somewhat

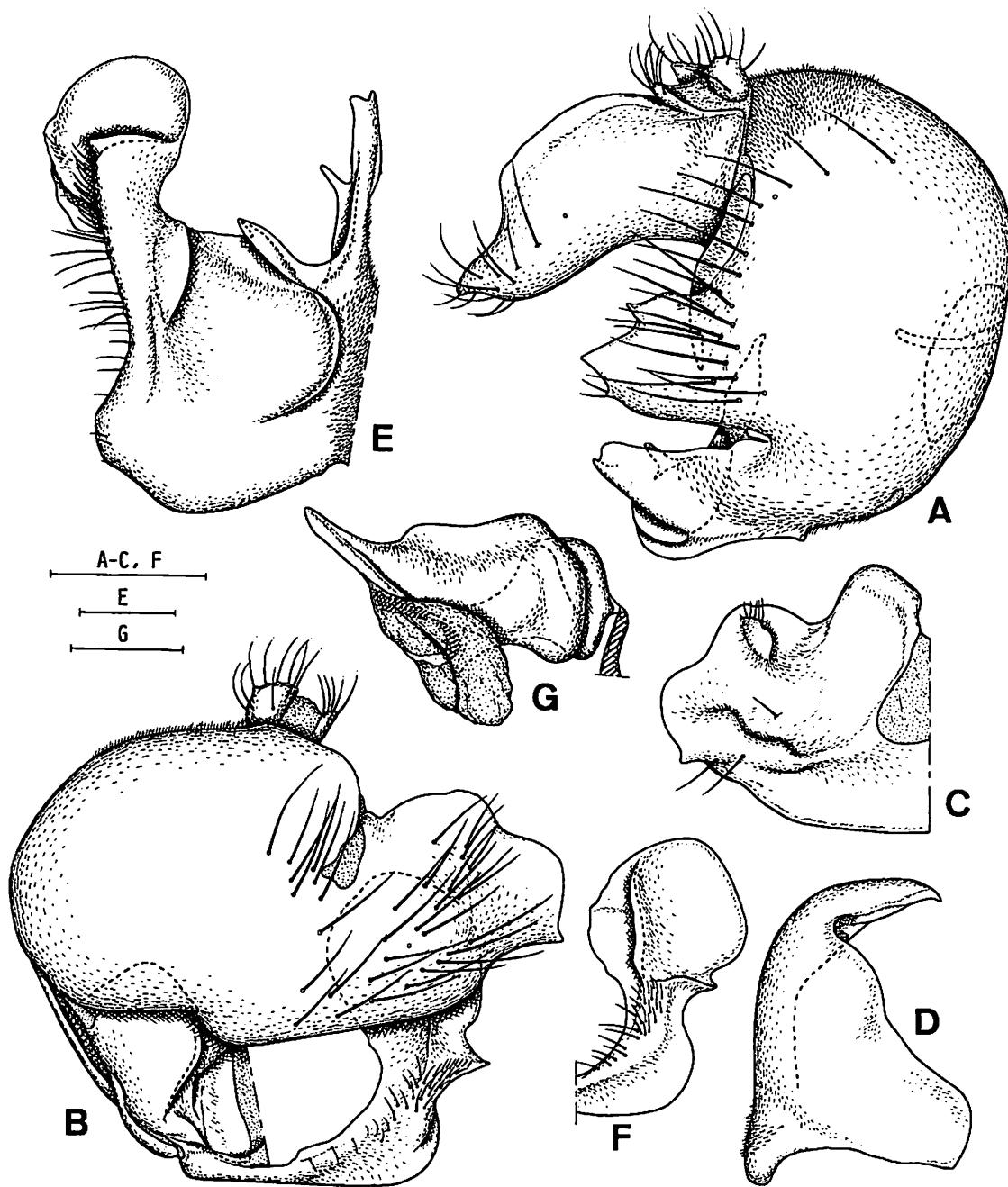


Fig. 11. Male genitalia of *Phora paricauda* sp. nov.

A, Genitalia in right lateral view; B, ditto in left lateral view; C, left surstylos in inner view; D, right surstylos in dorsal view; E, right hypandrial lobe in ventral view; F, left process of right hypandrial lobe in posterolateral view; G, aedeagus in right lateral view. Scales: A-C, F, 0.2 mm; E, G, 0.1 mm.

longish setulae.

Wing hyaline, very slightly tinged with brown, cells 1c, 2c and r1 more brownish; vein R₄₊₅ reddish brown, other veins yellow to brownish yellow. Costa long, costal index 0.55-0.57; 1st costal sector distinctly shorter than 2nd, costal sector index 0.70-0.75; vein M₂ weakly bisinuate; vein M₃₊₄ bisinuate; vein A₁ obsolescent; costal cilia long, 4.0-5.3× as wide as 2nd costal sector; axillary margin with 6

hairs. Wing length 3.28-3.48 mm, width 1.49-1.57 mm.

Legs black; fore leg brownish yellow at tip of femur, whole tibia and tarsus dark brown. Fore tibia 0.8-0.9× as long as 1st to 4th tarsomeres together, with a dorsal row of spine-like longish setulae; fore tarsus moderately dilated, 2nd and 3rd tarsomeres slightly narrower than tip of fore tibia, relative lengths of fore tarsomeres approximately 30 : 15 : 13 : 11 : 11. Mid tibia with 2 anterior bristles and a

dorsal row of 5-6 bristles. Hind tibia with 1 anterior bristle; ventroproximal prominence of hind femur very slightly produced, with several longish setulae on anterior surface.

Male genitalia shining black, right surstylus reddish brown. Lateral lobe of epandrium produced posteriorly and pointed at posterodorsal and posteroventral corners, the latter triangular-shaped in lateral view. Right surstylus gradually tapering distally on proximal 2/3, then abruptly narrowed to sharply pointed tip, strongly curved inwardly on distal 1/3, thus beak-like in dorsal view, bearing bristly hairs on distal 1/3. Left surstylus dorsoproximally with a relatively deep membranous incision, the surstylus broad, pointed at posteroventral corner, with posterior margin rounded and with dorsal margin convex, bearing bristles on proximal 1/2; inner side greatly produced inwardly on dorsal 2/3 of proximal portion (Fig. 11, C), with a weak swelling at posteroventral corner and a weak projection at posterodorsal corner, which is shorthaired on its dorsal portion. Right hypandrial lobe widely and strongly excavated on posterior 2/3 of ventromesal surface, the excavation with right lateral margin produced ventrally to form a strip-like narrow lobe. Right process of right hypandrial lobe small, tapering distally, with posteroventral corner produced and pointed, with an inner slender projection at middle. Left process of right hypandrial lobe roughly circularly widened on distal 1/2 in lateral view, shorthaired on left lateral surface. Aedeagus without Y-shaped extension of right lateral plate, carrying a U-shaped small sclerite on membranous ventral portion.

Body length: 2.7-3.5 mm.

Female. Unknown.

Holotype: ♂, Dobang Kharka (2400 m), E. Nepal, 23-25. x. 1971, Malaise trap, A. NAKANISHI.

Paratypes: 1♂, 15. x. 1971; 1♂, 15-19. x. 1971, Malaise trap; 6♂♂, 20-22. x. 1971, Malaise trap; 1♂, 23. x. 1971; 5♂♂, same data as holotype; 1♂, 25-26. x. 1971, Malaise trap; 1♂, 26-28. x. 1971, Malaise trap. All specimens were collected in the same locality and by same collector as holotype.

Distribution. East Nepal.

Remarks. This new species is easily distinguished from any other species by the male genitalia, which are characterized by their strongly tapered and sharply pointed right surstylus.

Phora digitiformis sp. nov.

(Figs. 12, A-F; 18, C)

Male. Frons somewhat wide, frontal index 0.31, narrowed posteriorly, width at the level of mediolateral seta 0.78-0.89 of that at supra-antennal. Preocellar seta 0.7

× as long as mediolateral, closer to mediolateral than to anterolateral; supra-antennal 0.8 of preocellar in length; frontal setulae very sparse, 0.5-0.9× as long as supra-antennal, arranged in two rows. Palpus with 4 short bristles on distal portion. Scutum short setulose.

Wing hyaline, very slightly tinged with grayish brown; vein R₄₊₅ reddish brown, other veins yellowish brown except pale A₁. Costa relatively long, costal index 0.53; 1st costal sector shorter than 2nd, costal sector index 0.78; veins M₂ and M₃₊₄ weakly bisinuate; vein A₁ complete to wing margin; costal cilia 2.3-3.0× as long as width of 2nd costal sector; axillary margin with 6 hairs. Wing length 1.98 mm, width 0.96 mm.

Legs black; fore leg dark yellow at tip of femur, whole tibia and tarsus, the latter slightly darkened on dorsal surface. Fore tibia 0.93× as long as 1st to 4th fore tarsomeres together, with a dorsal row of spine-like short setulae; fore tarsus distinctly dilated, 2nd and 3rd tarsomeres as wide as tip of fore tibia, relative lengths of fore tarsomeres approximately 17 : 9 : 8 : 8 : 7. Mid tibia with 1 anterior bristle and a dorsal row of 4-5 bristles. Hind tibia with 1 anterior bristle; ventroproximal prominence of hind femur slightly produced, protruding about 0.02 mm, with distal margin weakly rounded.

Male genitalia shining black. Lateral lobe of epandrium parallel-sided in lateral view, with posterodorsal corner rounded and posteroventral corner strongly produced posteriorly to form a sharply pointed projection. Right surstylus slender, wide at base, then narrowed distally, curved inwardly, bearing bristly hairs on distal portion. Left surstylus with a somewhat deep narrow membranous incision, rounded on posterior margin and posteroventral corner, with dorso-inner margin strongly produced inwardly to form a roughly triangular-shaped projection, which is sharply pointed at apex and distinctly serrate on its posterior margin, bearing bristles on ventral 1/2; inner side with a shorthaired weak swelling at posterodorsal corner, strongly produced near middle of posterior submarginal portion to form a triangular corn-like projection. Right hypandrial lobe widely and strongly excavated on posterior 1/2 of ventromesal surface, the excavation with right lateral margin produced ventrally to form a narrow strip-like lobe. Right process of right hypandrial lobe small and slender, tapering to weakly pointed apex, with a weak inner ridge at distal portion. Left process of right hypandrial lobe very large, solid, greatly produced on posterodorsal portion to form a broad yellowish laminate lobe, excavated on posterior and ventral surfaces, with posteroventral corner produced to form a flat small projection, which bears bluntly topped hairs on its dorsal surface, furnished with longish yellowish hairs on left lateral surface. Aedeagus without Y-shaped

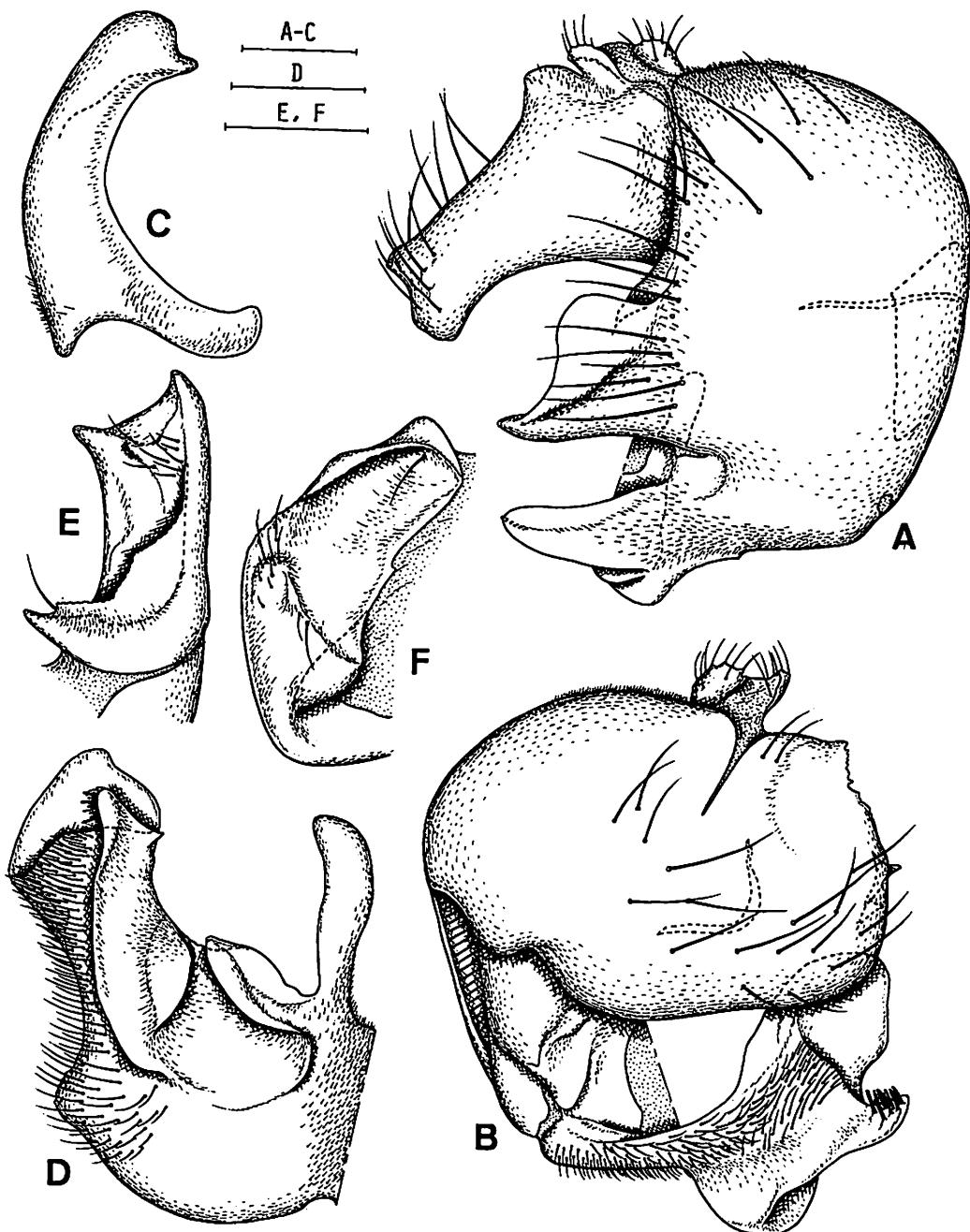


Fig. 12. Male genitalia of *Phora digitiformis* sp. nov.

A. Genitalia in right lateral view; B, ditto in left lateral view; C, right surstyli in dorsal view; D, right hypandrial lobe in ventral view; E, left surstyli in dorsal view, F, ditto in inner view. Scales: 0.1 mm.

extension of right lateral plate.

Body length: 1.9-2.4 mm.

Female. Differing from male as follows: Frons wider, frontal index 0.37, parallel-sided preocellar seta weak as long as supra-antennal, at same level with mediolateral. Wing clear, veins dark yellow; costa shorter, costal index 0.46-0.49; costal sector index 0.84-0.85; wing length 2.11-2.15 mm, width 0.98-1.01 mm. Mid tibia with a dorsal row

of 3 bristles.

Body length: 2.0-2.6 mm.

Holotype: ♂, Basantapur (2300 m), E. Nepal, 1-5. v. 1972, Malaise trap, Kyushu Univ. Coll.

Paratypes: 3 ♀♀, same data as holotype; 1 ♂ 2 ♀♀, same locality and collector as holotype, 6-10. v. 1972; 1 ♂, Pwekanko waterfall, Maymyo, Burma, 12. iii. 1980, N. KASHIWAII.

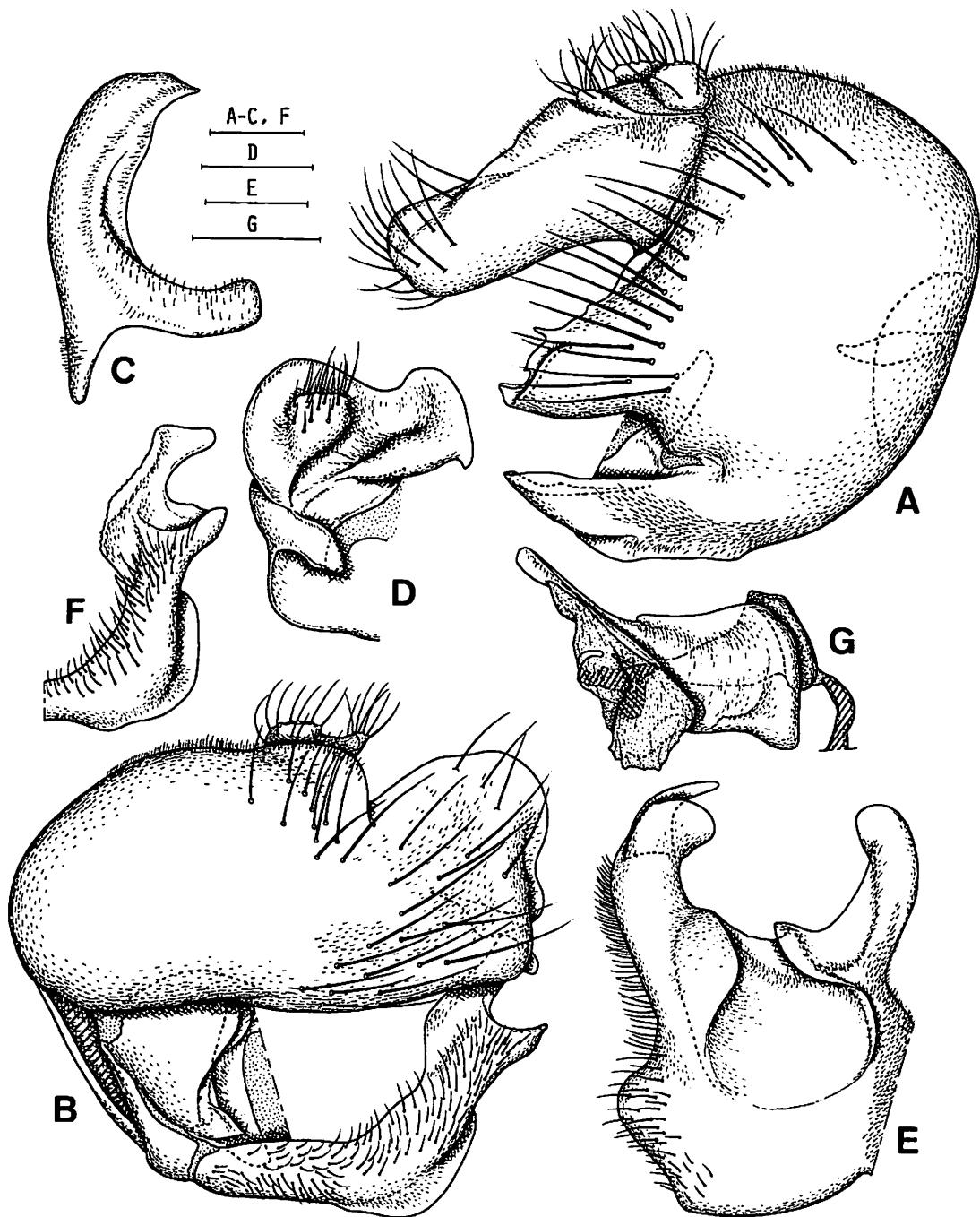


Fig. 13. Male genitalia of *Phora glebiata* sp. nov.

A, Genitalia in right lateral view; B, ditto in left lateral view; C, right surstyli in dorsal view; D, left surstyli in inner view; E, right hypandrial lobe in ventral view; F, left process of right hypandrial lobe in posterolateral view; G, aedeagus in right lateral view. Scales: 0.1 mm.

Distribution. East Nepal, Burma.

Remarks. This new species is undoubtedly related to the Japanese *P. saigusi* GOTOH, 1986 because the ventrodistal extension of the left process of the right hypandrial lobe bearing blunt-topped hairs is unique to these two species. It is, however, smaller than the latter

and its left surstyli differs in shape. Among Nepalese species it can only be confused with the small species, *P. acerosa* sp. nov. and *P. lacunifera* GOTOH, but their male genitalia clearly distinguish them. LIU and CHOU (1994) recorded *P. saigusi* based on one male from Yunnan in China, but their specimen should be reexamined,

especially comparing it with *P. digitiformis*.

***Phora glebiata* sp. nov.**
(Figs. 13, A-G; 18, D)

Male. Frons moderate in width, frontal index 0.29-0.31, narrowed posteriorly, width at the level of mediolateral seta 0.74-0.79 of that at supra-antennal. Preocellar weak, as long as bristly frontal setulae, 0.6× as long as mediolateral, slightly ventral to mediolateral; supra-antennal 0.6-0.7 of preocellar in length; frontal setulae bristly, 0.9-1.6× as long as supra-antennal, roughly arranged in two rows. Palpus with 3-4 short bristles on distal portion. Scutum short setulose.

Wing hyaline, very slightly tinged with grayish brown, cells c1, c2 and r1 more brownish; vein R₄₊₅ brownish yellow to reddish brown, other veins brownish yellow to brown. Costa relatively long, costal index 0.52-0.55; 1st costal sector distinctly shorter than 2nd, costal sector index 0.71-0.73; veins M₂ and M₃₊₄ bisinuate; vein A₁ complete to wing margin; costal cilia relatively long, 3.0-4.0× as long as width of 2nd costal sector; axillary margin with 5 hairs. Wing length 2.48-2.91 mm, width 1.18-1.32 mm.

Legs black; fore leg brownish yellow at tip of femur, whole tibia and tarsus, 2nd to 5th fore tarsomeres brown on dorsal surface. Fore tibia 0.88-0.90× as long as 1st to 4th fore tarsomeres together, with a dorsal row of spine-like setulae; fore tarsus rather dilated, 2nd to 4th tarsomeres as wide as tip of fore tibia, relative lengths of fore tarsomeres approximately 23 : 12 : 11 : 10 : 9. Mid tibia with 2 anterior bristles and a dorsal row of 4-5 bristles. Hind tibia with 1 anterior bristle; ventroproximal prominence of hind femur indiscernible.

Male genitalia shining black, right surstyli reddish brown. Lateral lobe of epandrium narrowed posteriorly, with posterodorsal and posteroventral corners weakly produced and pointed, with posterior margin oblique. Right surstylus slender, curved inwardly on distal portion, sharply pointed at tip in dorsal view, with proximal dorso-inner margin strongly produced inwardly to form a narrow rectangular extension, bearing bristly hairs on distal portion. Left surstylus dorsoproximally with a shallow membranous incision, the surstylus broad, with posterodorsal corner strongly rounded, straight on posterior margin, entirely bristled; inner side with a large swelling at posterodorsal corner, the swelling bristly haired on its dorsal portion, produced inwardly on dorsoproximal portion and at ventral 1/3 of posterior marginal portion as in Fig. 13, D. Right hypandrial lobe widely and deeply excavated on posterior 2/3 of ventromesal surface, the excavation with right lateral margin produced ventrally to form a narrow lobe. Right process of right hypandrial lobe small, tapering to sharply pointed tip, with a narrow inner

ridge on mesal surface. Left process of right hypandrial lobe enlarged, highly solid in structure, densely covered with longish hairs on left lateral surface; posterior surface weekly excavated with dorsal margin strongly produced to form a narrow laminate lobe and with ventral margin broadly rounded and serrate. Aedeagus without Y-shaped extension of right lateral plate, carrying a U-shaped small sclerite on posteroventral membranous area.

Body length: about 2.0 mm.

Female. Unknown.

Holotype: ♂, Dobang Kharka (2400 m), E. Nepal, 9. x. 1971, A. NAKANISHI.

Paratypes: 1♂, 20. ix. 1971; 1♂, 10. x. 1971; 1♂, 15. x. 1971; 1♂, 15-19. x. 1971, Malaise trap; 1♂, 19. x. 1971; 3♂♂, 19-20. x. 1971, Malaise trap; 3♂♂, 20-22. x. 1971; 2♂♂, 23-25. x. 1971, Malaise trap; 1♂, 25-26. x. 1971, Malaise trap. All specimens were collected in the same locality and by the same collector as holotype.

Distribution. East Nepal.

Remarks. This new species, which flies in autumn, is closely related to the Nepalese summer species *P. tenuiforceps* sp. nov. by reason that in both species, the left surstylus bears a bristle-haired large swelling on the inner side, but the former is sharply distinguished from the latter by the left surstylus, which bears an inwardly oriented process on the posterior marginal portion and the shape of the left process of the right hypandrium. In addition, the frons of *P. glebiata* is narrower and more strongly narrowed posteriorly than in *P. tenuiforceps*.

***Phora tenuiforceps* sp. nov.**
(Figs. 14, A-G; 18, E)

Male. Frons somewhat wide, frontal index 0.32-0.35, slightly narrowed posteriorly, width at the level of mediolateral seta 0.81-0.85 of that at supra antennal. Preocellar seta 0.6-0.7× as long as mediolateral, at same level with mediolateral; supra-antennal seta 0.6 of preocellar in length; frontal setulae bristly, 0.6-1.6× as long as supra-antennal, scattered. Palpus with 3-4 short bristles on distal portion. Scutum short setulose.

Wing hyaline, entirely tinged with brown; vein R₄₊₅ reddish brown, other veins yellowish brown. Costa relatively long, costal index 0.53-0.56; 1st costal sector distinctly shorter than 2nd, costal sector index 0.71-0.72; veins M₂ and M₃₊₄ bisinuate; vein A₁ incomplete, obsolescent at distal extreme; costal cilia relatively long, 2.9-4.0× as long as width of 2nd costal sector; axillary margin with 5-6 hairs. Wing length 2.91-3.19 mm, width 1.33-1.42 mm.

Legs black; fore leg brownish yellow at tip of femur, whole tibia and tarsus, the latter progressively darkened distally. Fore tibia 0.88× as long as 1st to 4th tarsomeres together, with a dorsal row of spine-like short setulae; fore

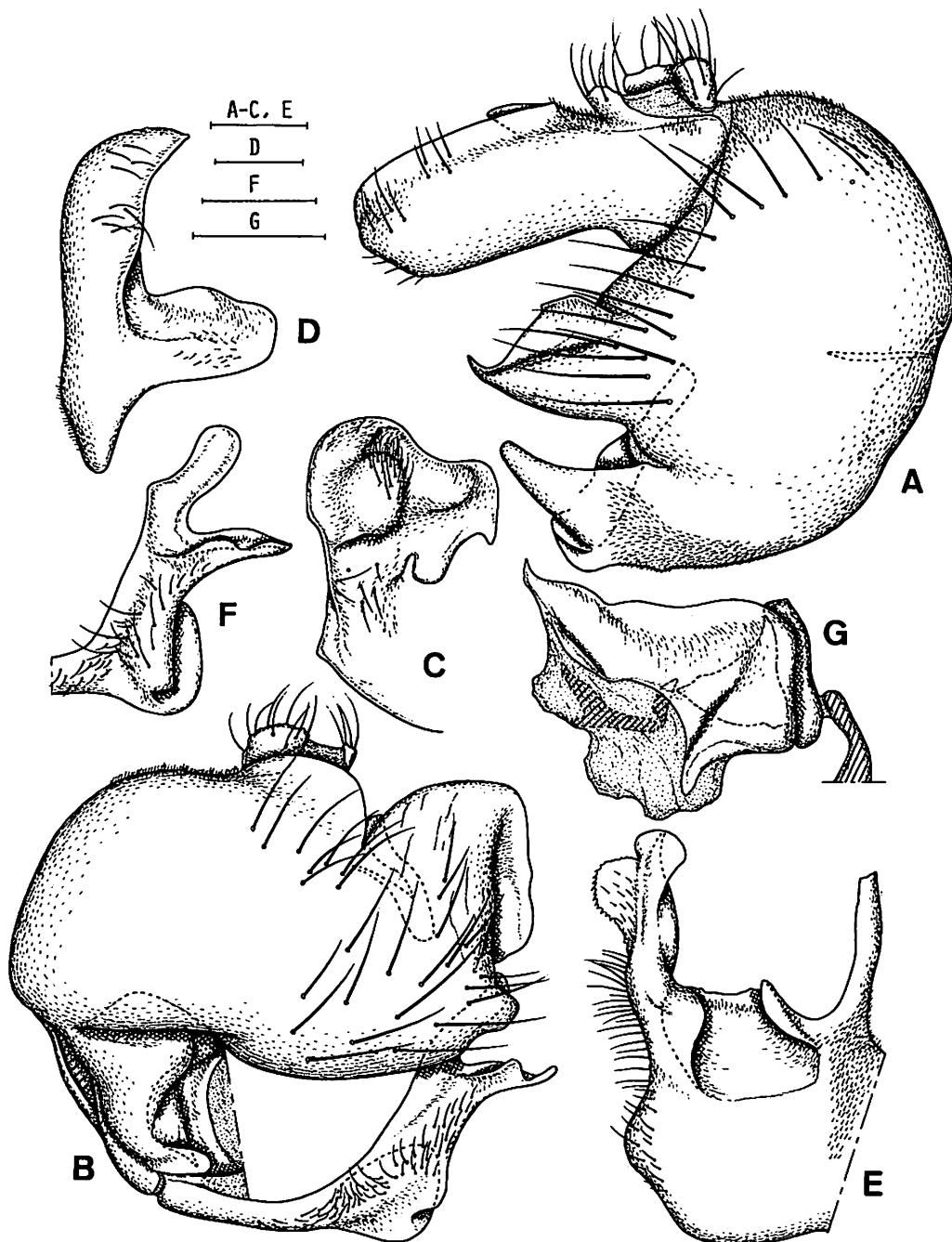


Fig. 14. Male genitalia of *Phora tenuiforceps* sp. nov.

A, Genitalia in right lateral view; B, ditto in left lateral view; C, left surstyli in inner view, D, right surstyli in dorsal view; E, right hypandrial lobe in ventral view; F, left process of right hypandrial lobe in posterolateral view; G, aedeagus in right lateral view. Scales: 0.1 mm.

tarsus somewhat dilated, 2nd and 3rd tarsomeres slightly narrower than tip of fore tibia, relative lengths of fore tarsomeres approximately 25 : 15 : 13 : 12 : 10. Mid tibia with 2 anterior bristles and a dorsal row of 6-7 bristles. Hind tibia with 1 anterior bristle; ventroproximal prominence of hind femur indiscernible.

Male genitalia shining brownish black, right surstyli

reddish brown. Lateral lobe of epandrium with posteroventral corner produced posteriorly and sharply pointed, pointed on posterodorsal corner, with posterior margin obliquely straight. Right surstyli slender, curved inwardly on distal portion, sharply pointed at apex in dorsal view, with proximal dorso-inner margin strongly produced inwardly to form a broad rectangular extension,

bearing bristly hairs on posterodorsal portion. Left surstylus dorsoproximally with a shallow V-shaped incision, the surstylus large, with posterodorsal corner rounded and posteroventral corner weakly produced posteriorly, nearly straight on posterior margin; inner side with a large swelling at posterodorsal corner, the swelling bearing bristly hairs on its dorsal portion, produced inwardly on dorsoproximal portion as in Fig. 14, C. Right hypandrial lobe widely and deeply excavated on posterior 1/2 of ventromesal surface, the excavation with posterior portion of right lateral margin weakly produced ventrally. Right process of right hypandrial lobe small, strongly tapering posteriorly to weakly rounded tip. Left process of right hypandrial lobe enlarged, solid, relatively sparsely bearing longish hairs on left lateral surface; posterior surface weakly excavated with dorsal margin strongly produced dorsally to form a narrow rectangular laminate lobe, with ventral margin semi-circularly rounded and with left lateral margin outwardly produced and serrate (Fig. 14, E, F). Aedeagus without Y-shaped extension of right lateral plate, carrying a small sclerite on posteroventral membranous area.

Body length: 2.8-2.9 mm.

Female. Unknown.

Holotype: ♂, Thudam (3500 m), E. Nepal, 21-30. vi. 1972, Malaise trap, Kyushu Univ. Coll.

Paratypes: 3♂♂, same data as holotype, 3♂♂, same locality and collector as holotype, 8-9. vii. 1972.

Distribution. East Nepal.

Remarks. This new species is the closest ally of *P. glebiata* sp. nov. by the reason mentioned in the remarks on the latter, but the details of the male genitalia are distinctly different. At the same time, *P. tenuiforceps* is similar to *P. hymachalensis* MOSTOVSKI, 2002 in the shapes of the lateral lobe of the epandrium, and the right and left surstyli, but the left process of its right hypandrial lobe is quite different from the latter, in addition to having a longer costa and a much shorter 1st costal sector.

Phora salpana sp. nov.

(Figs. 15, A-F; 18, F)

Male. Frons somewhat wide, frontal index 0.31, slightly narrowed posteriorly, width at the level of mediolateral seta 0.87 of that at supra-antennal. Preocellar 0.7×as long as mediolateral, at same level with mediolateral; supra-antennal seta 0.7 of preocellar in length; frontal setulae somewhat sparse, bristly, 1.1×as long as supra-antennal, roughly arranged in two rows. Palpus with 4 short bristles on distal portion. Scutum short setulose.

Wing hyaline, slightly tinged with grayish brown; vein

R₄₊₅ reddish brown, other veins brown. Costa moderate in length, costal index 0.51; 1st costal sector distinctly shorter than 2nd, costal sector index 0.72; vein M₂ very slightly bisinuate; vein M₃₊₄ bisinuate; vein A₁ incomplete disappearing near wing margin; costal cilia relatively long, 2.7-3.7×as long as width of 2nd costal sector; axillary margin with 6 hairs. Wing length 2.64 mm, width 1.24 mm.

Legs black; fore leg brownish yellow at tip of femur, whole tibia and tarsus, progressively darkened distally. Fore tibia 0.81×as long as 1st to 4th fore tarsomeres together, with a dorsal row of spine-like short setulae; fore tarsus distinctly dilated, 2nd to 4th tarsomeres as wide as tip of fore tibia, relative lengths of fore tarsomeres approximately 22 : 12 : 12 : 11 : 9. Mid tibia with 2 anterior bristles and a dorsal row of 5 bristles. Hind tibia with 1 anterior bristle; ventroproximal prominence of hind femur very slightly produced.

Male genitalia shining black. Lateral lobe of epandrium characteristic in tapering posteriorly to sharply pointed tip. Right surstylus slender, somewhat short, strongly curved inwardly on bristly haired distal portion, thus beak-like in dorsal view. Left surstylus dorsoproximally separated from epandrium by a deep membranous incision, the surstylus slender, oriented posteroventrally, slightly narrowed to midlength, then widened in lateral view, with posterodorsal and posteroventral corners angulated; inner side strongly produced inwardly on dorsoproximal portion to form a large projection which is pointed distally and excavated on its dorsal portion. Epandrial lobe weakly developed, with distal margin rounded. Right hypandrial lobe widely and strongly excavated on posterior 3/5 of ventromesal surface. Right process of right hypandrial lobe small, tapering to sharply pointed tip, with an inner ridge at distal portion, shorthaired on proximal 1/2. Left process of right hypandrial lobe enlarged, solid, with left dorsal margin strongly produced laterally, excavated on posterior surface, densely covered with longish hairs on left lateral surface. Aedeagus without Y-shaped extension of right lateral plate.

Body length: about 2.5 mm.

Female. Unknown.

Holotype: ♂, Salpa (2770-3000 m), E. Nepal, 21. vii. 1981, J. EMOTO.

Distribution. East Nepal.

Remarks. This new species is a close ally of the Taiwanese *P. tattakana* sp. nov. in that their left surstylus is slender and excavated on the dorsal surface, but it can be sharply distinguished from the latter especially by the sharply pointed lateral lobe of the epandrium and the left surstylus with the dorsoproximal portion produced

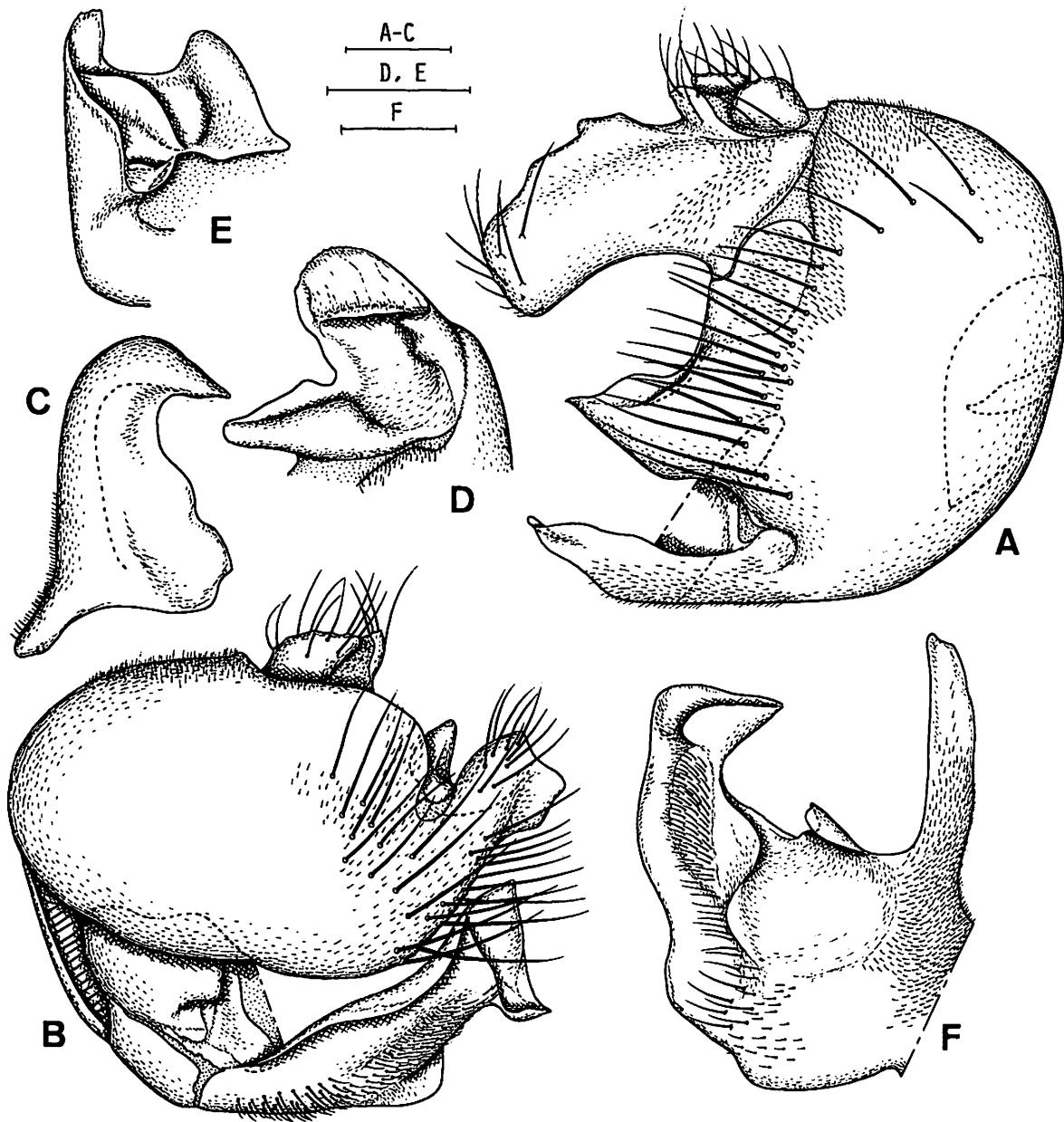


Fig. 15. Male genitalia of *Phora salpana* sp. nov.

A. Genitalia in right lateral view; B, ditto in left lateral view; C, right surstylos in dorsal view; D, left surstylos in dorsal view; E, ditto in inner view; F, right hypandrial lobe in ventral view. Scales: 0.1 mm.

inwardly into a stout projection. In addition the former has less brownish wings and a smaller body.

***Phora tattakana* sp. nov.**
(Figs. 16, A-G; 18, G)

Male. Frons somewhat wide, frontal index 0.33, narrowed posteriorly, width at the level of mediolateral seta 0.74-0.78 of that at supra-antennal. Frontal setae long; preocellar seta 0.6-0.7× as long as mediolateral, ventral to

mediolateral, closer to mediolateral than to anterolateral; supra-antennal seta 0.6-0.7 of preocellar in length; frontal setulae bristly, 0.9-1.4× as long as supra-antennal, roughly arranged in two rows. Palpus with 7 short bristles. Scutum covered with somewhat long setulae.

Wing hyaline, more or less distinctly tinged with grayish brown; vein R₄₊₅ reddish brown, other veins yellowish brown to brown, vein A₁ yellow to pale brown. Costa long, costal index 0.54-0.56; 1st costal sector distinctly shorter than 2nd, costal sector index 0.70-0.72;

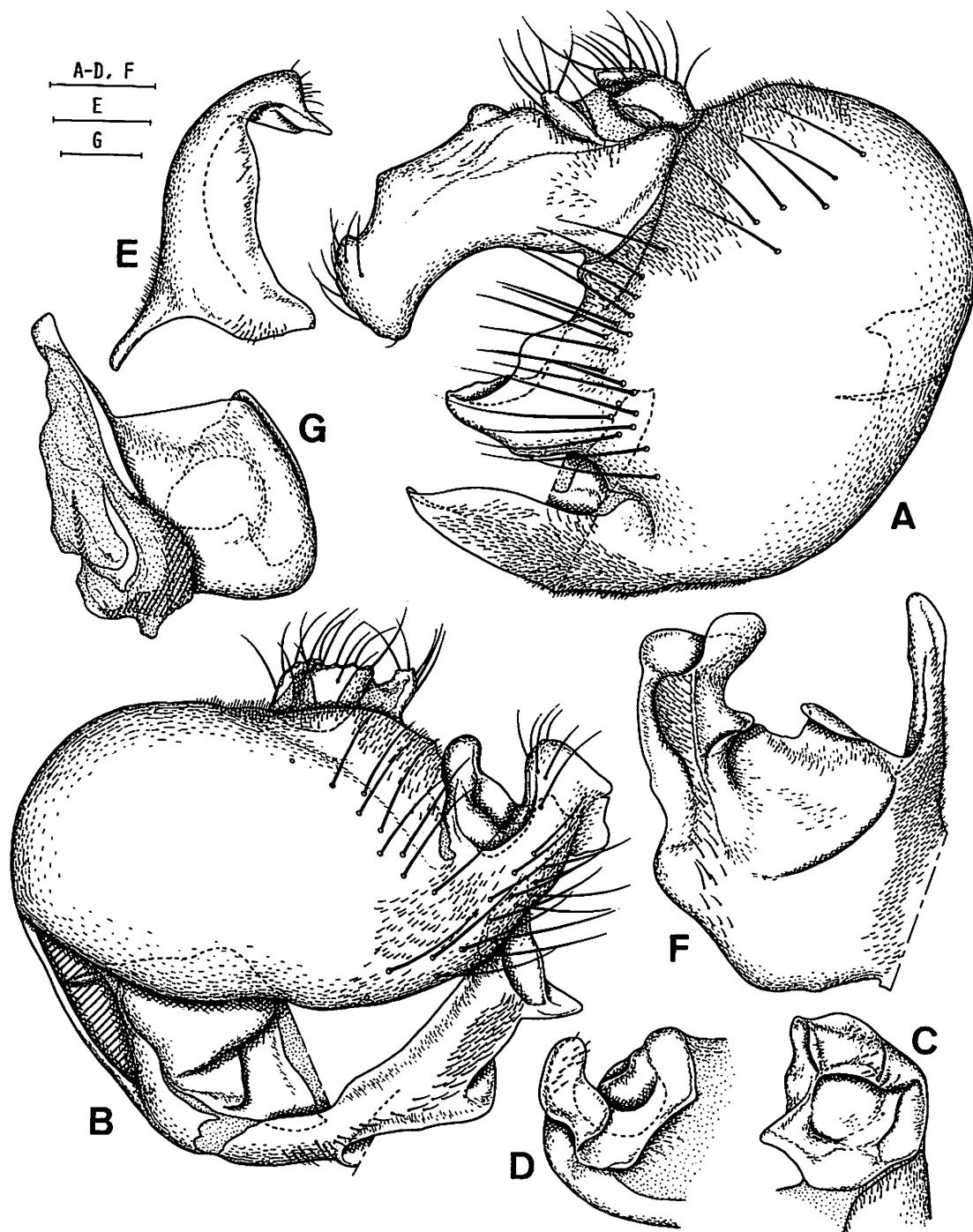


Fig. 16. Male genitalia of *Phora tattakana* sp. nov.

A, Genitalia in right lateral view; B, ditto in left lateral view; C, left surstylius in dorsal view; D, ditto in inner view; E, right surstylius in dorsal view; F, right hypandrial lobe in ventral view; G, aedeagus in right lateral view, somewhat posteriorly. Scales: A-F, 0.1 mm; G, 0.05 mm.

veins M₂ and M₃₊₄ bisinuate; vein A₁ complete to wing margin; costal cilia relatively long, 3.0-4.3× as long as width of 2nd costal sector; axillary margin with 7 hairs. Wing length 2.57-3.05 mm, width 1.21-1.40 mm.

Legs black; fore tibia brownish yellow to yellowish

brown, fore tarsus brown on dorsal surface. Fore tibia 0.92× as long as 1st to 4th tarsomeres together, with a dorsal row of spine-like short hairs; fore tarsus weakly dilated, distinctly narrower than tip of fore tibia, relative lengths of fore tarsomeres approximately 25 : 14 : 12 : 10 : 10. Mid

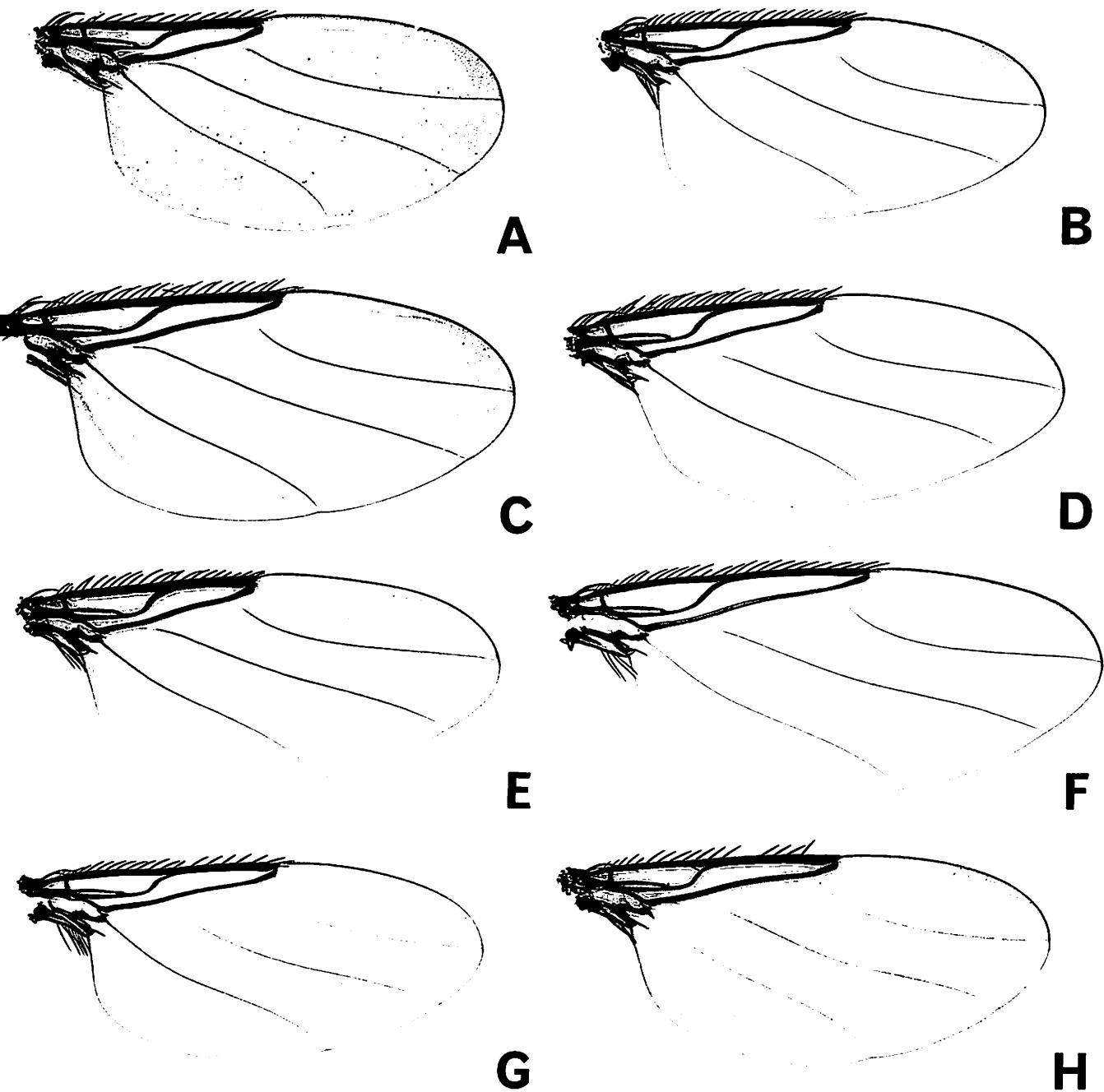


Fig. 17. Male wings of *Phora* spp.

A, *Phora orientis* sp. nov.; B, *P. fulvipennis* sp. nov.; C, *P. fensestrata* sp. nov.; D, *P. shirozui* sp. nov.; E, *P. subconvallium* sp. nov.; F, *P. nepalensis* sp. nov.; G, *P. acerosa* sp. nov.; H, *P. acuminata* sp. nov.

tibia with 2 anterior bristles and a dorsal row of 6-7 long bristles. Hind tibia with 1 anterior bristle; ventroproximal prominence of hind femur very slightly produced.

Male genitalia shining black, right surstyli brownish yellow. Lateral lobe of epandrium strongly tapering to blunt tip. Right surstylus slender, curved posteroventrally and inwardly, sharply pointed at posterodorsal corner in

dorsal view, bearing bristly hairs on distal portion. Left surstylus dorsoproximally with a deep membranous incision, the surstylus small, heavy, deeply excavated on dorsal surface; inner side irregularly produced inwardly on dorsal 2/3 as in Fig. 16, C-D. Right hypandrial lobe widely and deeply excavated on posterior 2/3 of ventromesal surface. Right process of right hypandrial lobe parallel-

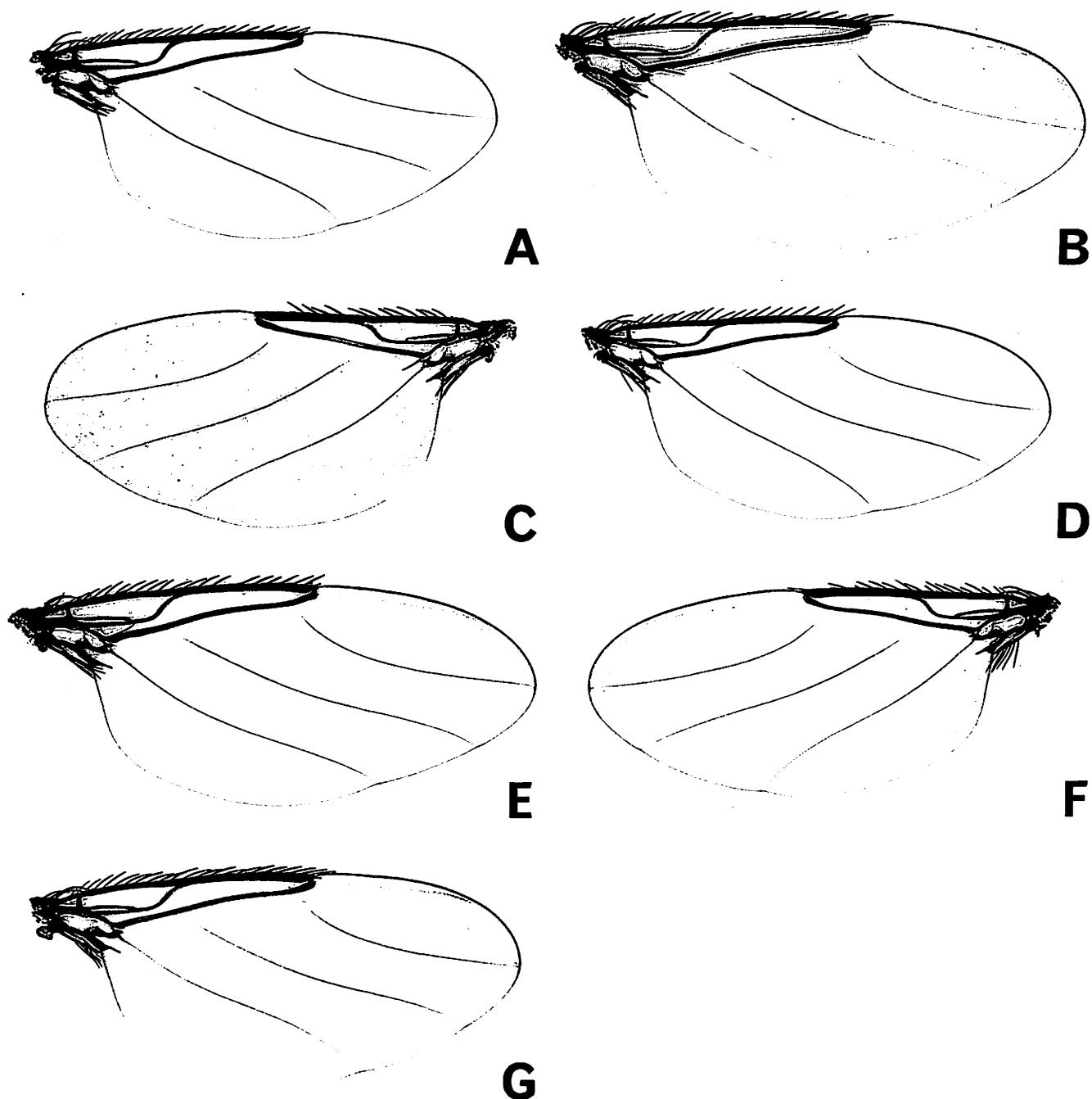


Fig. 18. Male wings of *Phora* spp.

A, *P. taiwana* sp. nov.; B, *P. paricauda* sp. nov.; C, *P. digitiformis* sp. nov.; D, *P. glebiata* sp. nov.; E, *P. tenuiforceps* sp. nov.; F, *P. salpana* sp. nov.; G, *P. tattakana* sp. nov.

sided to midlength, then tapering to sharply pointed tip, with a small inner ridge at distal portion. Left process of right hypandrial lobe enlarged, excavated on posterior and ventral surfaces, rather sparsely shorthaired on left lateral surface. Aedeagus without Y-shaped extension of right lateral plate, carrying an U-shaped sclerite on posteroventral membranous area.

Body length: 2.2-3.0 mm.

Female. Differing from male as follows: Frons wider, frontal index 0.42-0.43, parallel-sided; preocellar seta slightly ventral to mediolateral. Wing hyaline, slightly tinged with grayish brown, veins more yellowish; vein M_2 weakly bisinuate; costa shorter, costal index 0.49-0.51, costal sector index 0.77-0.79, costal cilia longer; wing

length 2.32-2.79 mm, width 1.09-1.27 mm. Mid tibia with 2 anterior bristles as in male and a dorsal row of 3 bristles.

Body length: 2.2-2.8 mm.

Holotype: ♂, Tatachia-anpu (2700 m). Lulinshan, Chiai Hsien, Taiwan, 10. iv. 1965, T. SAICUSA.

Paratypes: 1♂, same locality and collector as holotype, 1. iv. 1965; 4♂♂4♀♀, same data as holotype; 1♂3♀♀, Tungpu (2500 m), Lulinshan, Chiai Hsien, 28. iii. 1967, T. SHIROZU; 1♂1♀, same locality and collector, 2. iv. 1967; 3♂♂10♀♀, same locality and collector, 3. iv. 1967.

Distribution. Taiwan.

Remarks. This new species is closely related to the Nepalese *P. salpana* sp. nov. in the male genitalia, but the former has wider frons, browner wings and the male genitalia different in detail. So far as Taiwanese species are concerned, *P. tattakana* can only be confused with *P. taiwana* sp. nov. owing to the large body, the brownish wings and the venational resemblance, but they have distinctly different male genitalia.

P. tattakana may be uncommon in Taiwan and its habitat is probably restricted to the high altitude mountains.

Key to males of the *Phora* species dealt in the present study

1. Mid and hind tibiae with 2 or more anterior bristles on upper half, respectively.....2
- Hind tibia with 1 anterior bristle on upper half.....3
2. Costa distinctly long, costal index 0.55-0.56; first costal sector distinctly shorter than 2nd, costal sector index 0.76-0.78*nepalensis*
- Costa moderately long, constal index 0.51; first costal sector slightly shorter or as long as 2nd.....*capillosa*
3. Mid tibia with 2 anterior bristles on upper half4
- Mid tibia with 1 anterior bristle on upper half12
4. First costal sector slightly shorter, costal sector index 0.87-0.975
- First costal sector distinctly shorter than 2nd, costal sector index 0.70-0.777
5. Frons remarkably wide, frontal index 0.35-0.36, parallel-sided*fulvipennis*
- Frons somewhat narrow, frontal index 0.27-0.30, narrowed posteriorly.....6
6. Costal cilia very long, 3.8-4.6× as long as width of 2nd costal sector; left surstylus with posterodorsal corner weakly produced and rounded*shirozui*
- Costal cilia moderately long, 2.3-3.3× as long as width of 2nd costal sector; left surstylus with posterodorsal corner strongly produced distally into a long, slender,

- sharp pointed process*subconvallium*
7. Wing distinctly tinged with brown8
- Wing slightly tinged with brown9
8. Frons strongly narrowed posteriorly, width at the level of mediolateral seta 0.69-0.74 of that at supra-antennal; left surstylus large and wide, with a sharply pointed projection at posterodorsal corner...*taiwana*
- Frons narrowed posteriorly, width at the level of mediolateral seta 0.74-0.78 of that at supra-antennal; left surstylus slender in lateral view, without such a projection*tattakana*
9. Left surstylus broad, roughly rectangular with a bristly-haired large swelling on inner side.10
- Left surstylus without such a swelling11
10. Right surstylus abruptly narrowed on distal 1/3 to sharply pointed tip in lateral view, strongly curved inwardly*paricauda*
- Right surstylus not pointed at tip, slender, roughly parallel-sided in lateral view.....*salpana*
11. Left surstylus produced inwardly into a projection at ventral 1/3 of posterior margin (Fig. 13, D); ventral margin of posterior surface of left process of right hypandrial lobe broadly rounded (Fig. 13. E)*glebiata*
- Left surstylus without such a projection (Fig. 14, C); posterior surface of left process of right hypandrial lobe with ventral margin semi-circularly rounded and with left lateral margin outwardly produced and serrate (Fig. 14, E, F).....*tenuisforceps*
12. Wing distinctly tinged with brown; frons remarkably wide, frontal index 0.36*fenestrata*
- Wing slightly tinged with brown; frons moderately wide, frontal index 0.29-0.3213
13. Costa short, costal index 0.44-0.46; frons parallel-sided*orientis*
- Costa long, costal index 0.51-0.55; frons narrowed posteriorly14
14. First costal sector markedly shorter than 2nd, costal sector index 0.67-0.71*acuminata*
- First costal sector moderately shorter than second, costal sector index 0.74-0.8515
15. Frons strongly narrowed posteriorly, width at the level of mediolateral seta 0.62-0.64 of that at supra-antennal*acerosa*
- Frons narrowed posteriorly, width at the level of mediolateral seta 0.78-0.89 of that at supra-antennal*digitiformis*

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